

**THE HON'BLE NATIONAL GREEN TRIBUNAL
WESTERN ZONE BENCH, PUNE
ORIGINAL APPLICATION NO. 70 OF 2021**

IN THE MATTER OF:

BRACKISH WATER RESEARCH CENTRE

.... APPLICANT

VERSUS

GUJARAT STATE POLLUTION CONTROL
BOARD & ORS.

.... RESPONDENT(S)

ADDITIONAL DOCUMENTS FILED ON BEHALF OF RESPONDENT NO. 8

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Date: 04 JANUARY 2022

COUNSEL FOR RESPONDENT NO. 8

PLACE: NEW DELHI



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar-382 010

Phone : (079) 23226295

Fax : (079) 23232156

Website : www.gpcb.gov.in

BY R.P.A.D.

NOTICE OF DIRECTION UNDER SECTION-5 OF ENVIRONMENT (PROTECTION) ACT- 1986 FOR THE VIOLATIONS OF THE HAZARDOUS & OTHER WASTE (MANAGEMENT & TRANSBOUNDARY MOVEMENT) RULES -2016 AS AMENDED FROM TIME TO TIME.

WHEREAS you **M/S. HINDALCO INDUSTRIES LTD** are having an industrial plant at **Plot No: 2,10,11,43 GIDC Estate Dahej, At Po: Dahej-Lakhigam, Tal: Vagra, Dist: Bharuch.**

AND WHEREAS the Gujarat Pollution Control Board has issued Consolidated Consent & Authorization AWH- 108216 valid up to 02/03/2026 subject to conditions mentioned therein for manufacturing Copper Cathode, Sulphuric Acid (98%), Phosphoric Acid (as P₂O₅) etc.

AND WHEREAS during the inspection of your industrial plant on **08/11/2021** by the Authorized officer of the Board and it has been noticed that:

- 1) Copper slag is observed being dumped in about 10-meter width area of Reserved Forest, along the boundary wall of factory premises (outside the factory premises) behind the 16-hectare land area.
- 2) Unit has not lifted previously dumped copper slag from Reserved Forest area.
- 3) Ponding of storm water/contaminated storm water is observed in Reserved Forest area behind the 16- hectare land area of the unit. Analysis Report (AR) of sample collected from contaminated water/water ponding in the reserved forest area shows pH: 6.33, COD:59 mg/l, NH₃-N:6.16 mg/l, Copper :3.71 mg/l.
- 4) Analysis Report (AR) of Ambient Sampling Point: AAQM carried out at 16 acre area (behind the Smelter-3, common stack) shows RSPM: 442 mg/m³ which is high.
- 5) Analysis report (AR) of Samples collected from stacks shows unit is not complying emission norms prescribed in CCA as below:

Sample Location	Parameters Observed	Norms
Stack attached to secondary gas scrubber of Smelter-1, Plant	SO ₂ : 124.08 mg/nm ³	SO ₂ : 40 mg/nm ³
Stack attached to centralized scrubbing system of smelter-III	SO ₂ : 43.54 mg/nm ³	SO ₂ : 40 mg/nm ³
Stack attached to Sulphuric acid plant -1	ACID MIST: 30 mg/nm ³	ACID MIST: 25 mg/nm ³

- 6) Unit has not provided adequate Green belt and plantation area.

Clean Gujarat Green Gujarat

Outward NO:60626916/11/2021

AND WHEREAS it seems that you are not complying with the provisions of The Hazardous & Other Waste (Management & Transboundary Movement) Rules - 2016 by disposing hazardous waste in unauthorized manner. Further, handling of hazardous waste by unauthorized way may create serious environmental damages.

Now, therefore, I S. J. Pandit, IFS (Retd.), Member Secretary of Gujarat Pollution Control Board in exercise of the power conferred on file no. Legal-G-28 under section (5) of the Environment (Protection) Act -1986 propose to issue directions as under:

1. To close down your industrial activity under the section (5) of The Environment (Protection) Act - 1986.
2. To close down your industrial activity under said act if industrial activity runs by Captive Power Plant or D.G.Set.
3. To direct the concerned authority to disconnect electrical supply and Water supply of your unit.

You are hereby directed to submit Bank Guarantee of Rs. 20 Lacs (of any scheduled bank of Gujarat) and BG shall be valid upto the time limit mentioned in the action plan submitted by you on dated 26.08.2021 & 11.11.2021 and payable at Gandhinagar.

You are hereby directed to reply within 15 days from the date of serving of this notice failing which, it shall be presumed that you have nothing to say in this matter and appropriate action will be initiated against you for the conduct of the business of your industry, under the Environment (protection) Act 1986 for non-compliance of Hazardous and Other Waste (Management and Trans boundary Movement) Rules - 2016 & amendments thereof.

For and on behalf of
Gujarat Pollution Control Board



S.J.PANDIT, IFS (RETD)
MEMBER SECRETARY

NO: GPCB/BRCH/CCA-310(20)/ID:15178/

Date: /11/2021

Issued to:

M/S. HINDALCO INDUSTRIES LTD

Plot No: 210,11,43,

GIDC Estate Dahej,

At P.O. Dahej-Lakhigam,

Tal. Vagra, Dist: Bharuch.

Outed on 16/11/2021
 0626



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar-382 010

Phone : (079) 23226295

Fax : (079) 23232156

Website : www.gpcb.gov.in

Copy To:

1) The PCCF & HoFF,

Aranya Bhavan,

Near CH-3 Circle,

Sector-10A, Gandhinagar..... To take necessary action as per rules & regulations of your department. .

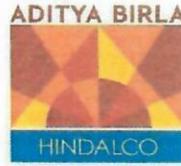
2) The Regional Officer,

Gujarat Pollution Control Board,

Regional Office,

Bharuch.....for monitoring & verification.

Outward NO:606269,16/11/2021



HIL/BC/Env./GPCB/BH-20-21

PCB ID:15178

Date: 16th Nov 2021

S.J. Pandit
IFS (RETD.)
Member Secretary
Gujarat Pollution Control Board
Paryavaran Bhavan
Sector 10-A
Gandhinagar (Guj.)

Subject: Submission of reply to the Notice of Direction u/s. 5 of Environment (Protection) Act, 1986 dated 16.11.2021 no. GPCB/BRCH-B/CCA-310(20)/ID:15178

Reference: Notice of Direction dated 16.11.2021 u/s. 5 of Environment (Protection) Act, 1986 for the Violation of the Hazardous Waste (Management & Transboundary Movement) Rules-2016 as amended from time to time

Dear Sir,

We are in receipt of your Notice of Direction referred above on the subject.

We have taken note of the contents of your letter and have initiated steps to submit the Bank Guarantee in the sum of INR 20 lakhs as directed. We hope to submit the Bank Guarantee to your office by end of this week or latest by early next week.

In so far as the observations made in the letter under reply, we confirm that we will take all steps necessary to meet the commitments made by us in our response letters 26.8.2021 and 11.11.2021. We will keep your office informed of the progress on a periodical basis.


17/11/21
Gujarat Pollution Control Board
Head Office
Sector No.-10-A,
Gandhinagar-382010

As you would appreciate, we have been constantly in touch with the Forest Department to seek the requisite permission to enter the notified Forest Area and carry out necessary activities. You would appreciate, Sir, that carrying out any activity in the Forest Area without permission would invite us to prosecution / action under the relevant laws. We continue to be in touch with the authorities to first evacuate substantial amount of water accumulated in the said area post monsoon, which we propose to treat in our ETP (subject to your approval) and once the land is accessible, we would be deploying our experts (from ERM) to carry out soil amelioration activities under their guidance and due support from the Forest Officials. Again, we will keep you informed of the progress and would seek your assistance where required to facilitate and expedite the process.

We are committed to abide by all the statutory rules and regulations under all the applicable laws. We will submit our detailed response to the other points referred to in the letter under reply within the period of 15 days as indicated therein. Do bear with us.

Sir, we remain available for any clarification that you may require.

Thanking you.

Yours faithfully,

For Hindalco Industries Limited,

Unit Birla copper Dahej

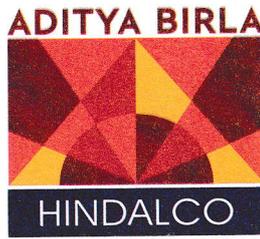


Dr. Sanjay Kumar
Head – Environment

CC:

1. The PCCF & HOFF
Aranya Bhawan
Near CH-3 Circle ,
Sector-10 A, Gandhinagar

2. Regional Officer,
Gujarat Pollution Control Board
Regional Office
Bharuch



HIL/BC/Env./GPCB/BH-20-21

PCB ID:15178
November 30, 2021

To
Member Secretary
Gujarat Pollution Control Board
Gandhinagar

Subject: Submission of reply to the Notice of Direction u/s. 5 of Environment (Protection) Act, 1986 dated 16.11.2021 no. GPCB/BRCH-B/CCA-310(20)/ID:15178

Reference: Notice of Direction dated 16.11.2021 u/s. 5 of Environment (Protection) Act, 1986 for the Violation of the Hazardous Waste (Management & Transboundary Movement) Rules-2016 as amended from time to time

Dear Sir,

This has reference to the above-mentioned Notice of Direction dated 16.11. 2021 and our letter dated 26th Nov, 2021 submitting the Bank Guarantee, as directed, in the sum of Rs. 20,00,000. We are submitting here with our reply as below:

1. Copper Slag is observed being dumped in about 10-meter width area of Reserve forest along the boundary wall of factory premises (Outside the factory premises) behind the 16 Ha land area)

Reply:

As informed earlier vide letter dated 05.08.2021, 26.08.2021, 18.09.2021 and 11.11.2021 since the inadvertent incident in 2009 relating to solid waste/effluent run-off in the Reserved Forest area along the boundary wall (northern periphery), we had constructed the boundary wall to arrest any such possibility going forward and also worked with the Forest Department for removal of the material. A perusal of the attached letters would also show that the Forest Department had levied compensation in the sum of INR 94,20,000/- which was paid by us in the year 2013 (**Annexure-A1**). As informed earlier vide letter dated 05.08.2021, we continue to be in discussion with the Forest Department for further remedial steps for carrying out soil amelioration including plantation and the recent letters exchanged with the Forest Department are attached for your review. We shall keep you informed of the progress in this regard. The request letter from Hindalco to Forest department, Forest Department's communication and our

further communication to Forest department are attached as **Annexure A2, A3 and A4** respectively.

2. Unit has not lifted previously dumped Copper Slag from Reserve Forest Area.

Reply:

As informed earlier vide letter dated 05.08.2021, 26.08.2021, 18.09.2021 and 11.11.2021, and as mentioned in point no 1 above, we are in the process of obtaining permission from Forest Department to access the area beyond our boundary wall to remove the slag and monsoon water accumulated over there. The same will be done immediately on receipt of the permission as mentioned in the point no 1 and 3.

3. Ponding of storm water/contaminated storm water is observed in Reserved Forest area behind the 16-Hectre land area of the unit. Analysis Report (AR) of sample collected from contaminated water/water ponding in the reserve forest area shows pH: 6.33, COD: 59 mg/l, Nh3-N: 6.16 mg/l, Copper: 3.71 mg/l.

Reply:

We have observed severe rainfall (Almost two times to average yearly rainfall) in the region and September 2021 being the highest rainfall in any month. Therefore, the reserve forest area, which acts as catchment area to significant forest land, is observed with huge monsoon accumulation. The area is not approachable and full of grass land and water bodies. The photograph of the area is enclosed as **Annexure-B1**. As per our observation in earlier years, the natural evaporation for the entire area will take approximately five months. Therefore, we have requested forest department vide our letter dated 11.11.2021 to allow us to assist in evacuation of the monsoon accumulation in the Reserve Forest area (copy enclosed as **Annexure-B2**).

The parameters of pH, COD, ammoniacal nitrogen in AR report are well within acceptable limit and reflects monsoon accumulation. The copper is marginally higher than acceptable limit to 3 mg/l and shows monsoon accumulation related dilution compared to pre-monsoon reading of 28.71 mg/l for soil.

As soon as we get the permission from forest department, the water evacuation will take about a month and subsequently soil amelioration followed by plantation activities will start in supervision of forest department.

4. Analysis report (AR) of Ambient Sampling point: AAQM carried out at 16 Aere Hectre area (behind the Smelter-3, common stack) shows RSPM: 442 mg/m3 which is high.

Reply:

The area is at our 16 Ha land (Smelter-3 Workshop Area), which is 130 mtr to the North of the plant. Since the area is a low-lying area, it was recently backfilled and is under development. The area, where monitoring device was installed could be influenced by open land, backfilling, soil preparation and plantation activities along the periphery of the boundary and relatively higher wind velocity due to close vicinity to the sea.

However, we have been diligently continuing with the sprinkling at nearby roads with dedicated water tankers.

5. Analysis report (AR) of samples collected from stacks shows unit is not complying with emission norms prescribed in CCA as below.

Reply:

Sample Location	Parameters Observed	Norms	Response
Stack attached to Secondary Gas Scrubber of Smelter-1 Plant	SO ₂ : 124.08 mg/Nm ³	SO ₂ : 40 mg/Nm ³	<p>During the visit and stack monitoring, sudden intermittent uneven emission noticed and was due to certain issues in the draft management equipment and control system in Smelter-1. The same got reflected in AR. As replied earlier on 12th Nov, 2021, the issue has been promptly addressed by adding additional scrubber recirculation pumps in line by making provision after thorough overhauling. We are closely monitoring the process parameters on regular intervals.</p> <p>After detail investigation, we found that one out of two dampers meant for diversion of rich SO₂ gas from SAP to scrubber during start-up/shutdown, was having minor under seat passing that had enhanced the SO₂ concentration at scrubber inlet. We have thoroughly checked the damper seating seals (flow regulating valve seat) and rectified the same.</p> <p>We would like to submit for your perusal the monthly monitoring data by 3rd party from January to Nov, 2021, which is well within limit [Annexure – C1].</p> <p>Since, this system has been in operation for close to 20 years, we are constantly evaluating contemporary technological</p>

			<p>options to modernize entire off-gas management system. As communicated earlier, we engaged M/s. MECON (reputed engineering solutions consultant) who carried out pre-feasibility study, technology assessment as well as evaluating globally renowned technology supplier such as MECS, ABB, DUCON, HATCH etc. This exercise was carried out 2018-2020.</p> <p>We have also been engaged with internationally renowned experts for copper metallurgical industry on Integration Master Plan, Pre- Basic and Basic engineering as well as planning the equipment ordering and other ancillary support. As you would appreciate, owing to restrictions, both domestic and international travel due to COVID-19, our plans were adversely impacted. Notwithstanding, we have released the order to M/s. Gas Cleaning Technologies LLC, USA in July, 2021 and the expert conducted a site visit in August, 2021. We envisage the entire execution would cost around INR 150 crore (approx.) which would require not only delivery of hundreds of equipment but also mobilization of about 1000(+) manpower etc. We will continue to keep tight timelines for early completion of this project which given the current limitations on travel, mobilization etc. appears to be achievable by the end of 2022.</p> <p>Meanwhile, we have initiated discussions with M/s Thermax to recommend solution for addressing intermittent fluctuation issues for the existing system. Thermax team has already visited the site on 25th Nov, 2021 and we shall continue to work with them to implement further remedial measures.</p>
Stack attached to Centralized Scrubbing system of Smelter-III	SO ₂ : 43.54 mg/Nm ³	SO ₂ : 40 mg/Nm ³	As replied earlier dated 31.03.2021, we have carried out all the required improvement activities and thereby keeping PM and SO ₂ emission always below norms for this scrubber. We have investigated this marginal increase of 3.54 mg/Nm ³ above norms and could only find

			<p>that the density of scrubber liquor was marginally higher. The same could be due to delayed scrubber bleed, as the access platform/floor was occupied by people doing stack monitoring activities.</p> <p>We would like to submit for your perusal monthly monitoring data by 3rd party from January to Nov, 2021, which is well within limit [Annexure – C2].</p>
Stack attached to Sulphuric acid	ACID MIST: 30 mg/Nm ³	ACID MIST: 25 mg/Nm ³	<p>Our Sulphuric Acid plant is designed with Dupont (Monsanto). Double contact double absorption (DCDA) process and runs with automatic control through DCS. We have been monitoring the stack periodically by thimble method (IS-11255 part-2) the analysis for the last few months (Jan-21 to Nov-21) enclosed as Annexure-C3. You would notice, Sir, the data collected just after a day of the inspection also shows results within norms.</p>

6. Unit has not provided adequate Green Belt and Plantation area

Reply: As suggested during the visit we have initiated activities to increase plantation in the periphery of our premises and will continue to take all necessary steps to develop Green Belt/Plantation. We would also like to state that currently we have about 117 ha under Green Belt. Every year, we do replantation and develop new plantation for the areas affected due to natural events such as cyclone. As an example, we have also done plantation in about 1000sqm since April this year and we have plans to cover additional 5000sqm by March next year.

We are committed to abide by all the statutory rules and regulations under various environmental laws.

Sir, we remain available for any clarification that you may require. Please do offer an opportunity for personal hearing to put forward the explanations/clarifications provided by us.

Thanking you.

Yours faithfully,

For Hindalco Industries Limited,

Unit Birla copper Dahej


Krishanu Mahapatra

Head – Quality & Environment

CC:

- 1) The PCCF & HoFF**
Aranya Bhavan, Gandhinagar
- 2) The Regional Officer**
GPCB, Bharuch



ગુજરાત પ્રદૂષણ નિયંત્રણ બોર્ડ

સી-૧/૧૧૯/૩, ઇ.આઈ.ડી.સી., ફેઝ-૨, નર્મદાનગર, ભરૂચ-૩૯૨ ૦૧૫. ફોન : (૦૨૬૪૨) ૨૪૬૩૩૩
ઈમેઇલ : ro-gpcb-bhar@gujarat.gov.in વેબ સાઈટ : www.gpcb.gujarat.gov.in

તપાસ માટે દાખલ થવાની સૂચના (નોટીસ)

PCB Id:- 1578

તારીખ : ૦૧/૧૨/૨૦૨૧

પાણી અધિનિયમ ૧૯૭૪ની કલમ-૨૩, હવા અધિનિયમ ૧૯૮૧ની કલમ-૨૪ અને પર્યાવરણ (સુરક્ષા) અધિનિયમ - ૧૯૮૬ની કલમ-૧૦ હેઠળ અમોને મળેલ સત્તાની રૂએ અમો નીચે સહી કરનાર અમોને જરૂરી લાગે તેની સહાય લઈને તમામ સમયે નીચેના હેતુઓ માટે આપની જગ્યામાં દાખલ થવાનો અને તપાસ કરવાનો અધિકાર ધરાવીએ છીએ.

- (૧) અમોને સોંપેલા રાજ્ય બોર્ડ/કેન્દ્ર સરકારનાં કાર્ય બજાવવાના હેતુ માટે,
- (૨) આવા કોઈ કાર્યો બજાવવાના છે કે કેમ અને તેમ હોય તો કઈ રીતે તે બજાવવાના છે અથવા આ અધિનિયમ અથવા તે હેઠળ કરેલા નિયમોની અથવા આ અધિનિયમ હેઠળ બજાવેલી કોઈ નોટીસની, કરેલા કોઈ હુકમની, આદેશની અથવા આપેલા કોઈ અધિકારપત્રની કોઈ જોગવાઈનું પાલન કરવામાં આવી રહ્યું છે કે પાલન કરવામાં આવ્યું છે કે કેમ તે નક્કી કરવાના હેતુ માટે,
- (૩) કોઈ સાધન સામગ્રી, ઔદ્યોગિક પ્લાન્ટ, રેકર્ડ, રજીસ્ટર, દસ્તાવેજ અથવા અન્ય કોઈ મહત્વની વસ્તુની તપાસ કરવા અને તેની કસોટી કરવાના હેતુ માટે અથવા જે જગ્યામાં તેને એમ માનવાને કારણ હોય કે આ કાયદા કે તે હેઠળ કરેલા નિયમો મુજબ કોઈ ગુનો કરવામાં આવ્યો છે, અથવા થવાની તૈયારીમાં છે, તેવી કોઈ જગ્યાની ઝડતી લેવા માટે અને તેને એમ માનવાને કારણ હોય કે આ કાયદા કે તે હેઠળ કરેલ નિયમો હેઠળ શિક્ષાપાત્ર કોઈ ગુનો કર્યાનો પુરાવો, તેવા સાધન સામગ્રી, ઔદ્યોગિક પ્લાન્ટ, રેકર્ડ, રજીસ્ટર, દસ્તાવેજ અથવા અન્ય કોઈ મહત્વની વસ્તુ કબજે લેવા માટે અમે નીચે જણાવેલ સમયે દાખલ થઈએ છીએ.

ઉદ્યોગ/કારખાનામાં દાખલ થવાનો સમય : ૧૫:૦૦ Hrs તા. ૦૧/૧૨/૨૦૨૧

અમારી સાથે સહાય માટે નીચેની વ્યક્તિઓ પણ છે.

૧. A. H. Vasava, AEE
૨. R. H. Master, SSA
૩. /

પ્રતિ,

M/s. Hindalco Industries Ltd.

Plot No- 2, 10, 11, 43,

GIDC Estate, Dahanu,
Po: Dahanu - Lakhigam,
Ta- Vagra, Bhavnagar.

સહી :-.....

અધિકારીનું નામ :-..... B. P. Prasad

હોદ્દો :-..... D.E.E.

(Signature)



ગુજરાત પ્રદૂષણ નિયંત્રણ બોર્ડ

13 1324

સી-૧/૧૧૯/૩, ઝ.આઈ.ડી.સી., ફેઝ-૨, નર્મદાનગર, ભરૂચ-૩૯૨ ૦૧૫. ફોન : (૦૨૬૪૨) ૨૪૬૩૩૩
ઈમેઈલ : ro-gpcb-bhar@gujarat.gov.in વેબ સાઈટ : www.gpcb.gujarat.gov.in

પ્રતિ શ્રી

Hindalco Inds Ltd
Plot No. 2, 10, 11, 43
GIDC Dahaj
Tal - Vagra, Dist - Bharuch

વિષય : આપના એકમની બોર્ડ દ્વારા લેવામાં આવેલ તા. ૦૯/૧૨/૨૦૨૧ નાં રોજની મુલાકાત.

શ્રીમાન,

આપના એકમની આજ રોજ મુલાકાત લેવામાં આવેલ તે દરમિયાન નીચે મુજબના મુદ્દાઓ ધ્યાનમાં આવેલ છે.

1. Copper slag is still observed lying dumped in about 10 meter width area of Reserve Forest area along the boundary of factory premises. Take necessary action for the same.
2. Contaminated water ponding is observed in the reserved Forest area beside the boundary wall of the premises. One sample of the same is collected to check the contamination level. Take necessary action for the same.
3. About 1200 new ^{tree} plantation is carried out by you along northern boundary wall adjacent to ઉત્તરોક્ત બાબતની પૂર્વતા દિન-૩ માં કરી અત્રેની તેમજ ગાંધીનગર ખાતેની વડી કચેરીએ જાણ કરવા આથી જણાવવામાં આવે છે. સદર બાબતે પગલાં લેવામાં ચુક થશે તો બોર્ડ દ્વારા કાયદાકીય પગલાં લેવામાં આવશે જેની નોંધ લેવી. The reserve forest. Complete the remaining tree plantation along northern boundary wall at the earliest

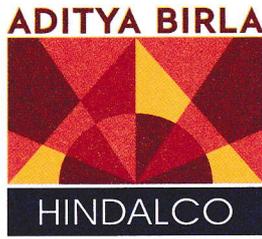
સ્વીકારનારનું નામ, હોદ્દો તથા સહી

શ્રી Krishna Mahapatra
AVR - Quality & Env

R H Master
SSA

A H VADIA
AVR
B D HASAN
DEE

નકલ રવાના : સભ્ય સચિવશ્રી, ગુ.પ્ર.નિ. બોર્ડ કચેરી, ગાંધીનગર.....જાણ સારું



14 1325
10/12/2021
Gujarat Pollution Control Board
Head Office
Sector No.-10-A,
Gandhinagar-382010

To,
Additional Principal Chief Conservator of Forest (Land)
Aranya Bhavan , Gandhinagar

09.12.2021

Sub: Permission to evacuate in Reserve Forest Area adjacent to our boundary

Reference:

1. Order dated 18.11.2021 in OA No. 70/2021 filed before the Hon'ble National Green Tribunal, Western Bench, Pune
2. Our Letter dated 11.11.2021

Sir,

This refers to the abovementioned communication for permission to carry out soil amelioration and plantation in the Reserve Forest Area adjacent to our northern side boundary.

Vide our letter dated 11.11.2021 (copy attached as **Annexure-A**) we had requested your guidance in evacuating the water accumulated in the area observed due to heavy and unprecedented rainfalls in September 2021 which has been reiterated in the latest order dated 18.11.2021 of the Hon'ble National Green tribunal, Western Bench, Pune in OA No. 70/2021. (Order copy attached as **Annexure-B**).

We seek your guidance and support in the matter.

We remain available for any further clarifications/suggestions from your end.

Thanking You

For Hindalco Industries Limited

Anil Tiple
Jt. President (HR)

CC:

1. The Principal Chief Conservator of Forest & HoFF
Aranaya Bhavan, Gandhinagar, Gujarat
2. Assistant Conservator of Forest (A.C.F.), Kanbiyaga, Bharuch
3. Gujarat Pollution Control Board (GPCB), Gandhinagar.

PR. C. F. & H. O. FF
G. S. GANDHINAGAR
DEC 2021
INWARD NO.
BRANCH
10-12-21
Dispatch Clerk
Addl. Pri. Chief Conservator of Forest
Land,
Gujarat State, Gandhinagar

HINDALCO INDUSTRIES LIMITED

(UNIT : BIRLA COPPER)
P.O. : Dahej, Dist. Bharuch,
Gujarat-392 130, INDIA.
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Regd. Ahura Centre, 1st Floor, B-Wing,
Mahakali Caves Road, Andheri (East), Mumbai 400 093
Telephone +91 22 6691 7000 / **Fax** : +91 22 6691 7001

Website www.hindalco.com
Email hindalco@adityabirla.com
Corporate Identity No. L27020MH1958PLC011238



To,
Assistant Conservator of Forest
Collector Office Compound
Kanbiyaga, Bharuch

11.11.2021

Sub: Permission to evacuate in Reserve Forest Area adjacent to our boundary

Reference :

1. Letter No. A/PVY/3/57071/2021-22 dated 07.09.2021
2. Our reply to the letter dated A/PVY PVY/3/57071/2021-22 dated

Sir,

This refers to the abovementioned communication for permission to carry out soil amelioration and plantation in the Reserve Forest Area adjacent to our northern side boundary.

In last monsoon, we have observed severe rainfall (Almost two times to average yearly rainfall) in the region and the month of September 2021 recording the highest rainfall in any month. Therefore, the reserve forest area, which acts as catchment area to significant forest land, is observed with huge accumulation of monsoon water.

To initiate soil amelioration and plantation activity, it is necessary to evacuate the monsoon water under your supervision and guidance.

Please allow us and guide us and in evacuating the water accumulated in the area.

We remain available for any further clarifications/suggestions from your end.

Thanking You

For Hindalco Industries Limited

Anil Tiple.
Jt. President (HR)

CC: Range Forest Officer, Maktampur, Bharuch

11/11/2021
Asst. Conservator of Forest
Bharuch Region Sub. Division, Bharuch

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(UNIT : BIRLA COPPER)
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Item No. 05

(Pune Bench)

**BEFORE THE NATIONAL GREEN TRIBUNAL
WESTERN ZONE BENCH, PUNE**

(By Video Conferencing)

Original Application No.70/2021 (WZ)

Brackish Water Research

Appellant(s)

Versus

Gujarat Pollution Control Board & Ors.

Respondent(s)

Date of hearing: 18.11.2021.

**CORAM: HON'BLE MR. JUSTICE M. SATHYANARAYANAN, JUDICIAL MEMBER
HON'BLE DR. ARUN KUMAR VERMA, EXPERT MEMBER**

Applicant: Ms. Shilpa Chouhan, Advocate for Applicant.

Respondent(s) Mr. Maulik Nanavati, Advocate for R-,2.
Mr. Aniruddha Kulkarni, Advocate for R-6.
Mr. Rahul Garg, Advocate for R-7
Mr. C.S. Vaidyanathan, Senior Advocate a/w
Mr. Ashish Prasad & Mr. Kausthub Mishra, Advocates for R-8.

ORDER

1. The Tribunal in continuation of the earlier order dated 27/10/2021, is passing the following order:-

2. Heard the submissions of Ms Shilpa Chouhan, learned Counsel appearing for the Applicant, Mr.C.S.Vaidyanathan, learned Senior Counsel, assisted by Mr. Ashish Prasad, learned Counsel appearing for the Project Proponent (PP)- 8th Respondent. The learned Senior Counsel appearing for the 8th Respondent would submit that 8th Respondent -PP has filed reply affidavit with Annexures A-8 to A-16 and responding to the same, the learned Counsel appearing for the Applicant, prays for short accommodation to respond to the same.

3. Mr. C.S. Vaidynathan, learned Senior Counsel appearing for the 8th Respondent would submit that whatever infractions/violations have been pointed out can be set right provided that the Forest Department should co-operate and also prays for appropriate directions.

4. Mr. Maulik Nanavati, learned Counsel appearing for the Respondent Nos. 1 and 2 would submit that inspection has been caused and the Reports have also been filed and prays for time to file reply-affidavit with supporting documents and also undertakes to serve same in advance a copy upon the learned Counsel appearing for the Applicant as well as the respective learned Counsels of the Respondents also.

5. Mr. Aniruddha Kulkarni, learned Counsel undertakes to enter appearance on behalf of the 6th Respondent and Mr. Rahul Garg, learned Counsel, appearing on behalf of the 7th Respondent, also pray for short accommodation to file reply affidavit with supporting documents.

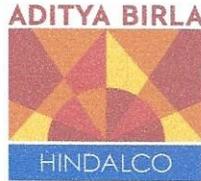
6. Respondent Nos. 3,4 & 5 have been served and their names appear in the Cause List, however, there is no representation on their behalf.

7. Call on 05/01/2022 and by that time rejoinder affidavit to the reply affidavit of the 8th Respondent as well as reply affidavit of Respondent No.2 GPCB and reply affidavits by Respondent Nos. 1, 6 and 7 be filed.

M. Sathyanarayanan, JM

Dr. Arun Kumar Verma, EM

November 18, 2021
Original Application No.70/2021(WZ))hk



HIL/BC/Env. /GPCB/BH-20-21

PCB ID:15178

Date: 13th Dec 2021

To

✓ **The Regional Officer**

Gujarat Pollution Control Board
Narmada Nagar, Bharuch

Subject: Submission of reply based on observations by the GPCB team dated 09th Dec, 2021

Reference:

GPCB follow up visit dated 9th December 2021 against Notice of Direction dated 16.11.2021 u/s. 5 of Environment (Protection) Act, 1986 for the Violation of the Hazardous Waste (Management & Transboundary Movement) Rules-2016 as amended from time to time

Dear Sir,

This has reference to visit of GPCB officials dated 09th December 2021 and observation given subsequently. We are submitting here with our reply as below:

Observation No.1: Copper slag is still observed lying dumped in about 10-meter width area of Reserve forest along the boundary of the factory premises. Take necessary action for the same.

Reply: As informed earlier vide letter dated 05.08.2021, 26.08.2021, 18.09.2021, 11.11.2021 and 30.11.2021, since the inadvertent incident in 2009 relating to solid waste/effluent run-off in the Reserved Forest area along the boundary wall (northern periphery), we had constructed the Boundary wall to arrest any such possibility going forward and also worked with the Forest Department for removal of the material. A perusal of the attached letters would also show that the Forest Department had levied compensation in the sum of INR 94,20,000/- which was paid by us in the year 2013 (**Annexure-A1**). As informed earlier vide letter dated 05.08.2021, we continue to be in discussion with the Forest Department for further remedial steps for carrying out soil amelioration including plantation and the recent letters

Registered Office

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Corporation Identity Number : L27020MH1958PLC011238, E-Mail ID: hildalco@adityabirla.com

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(UNIT : BIRLA COPPER)
PO: Dahej, Dist: Bharuch
Gujarat – 392 130 (India)

Telephone: +91 2641256004-6

Website www.hindalco.com

Fax: +91 2641 251002-3

14/12/21
Post Received
Gujarat Pollution Control Board
BHARUCH

exchanged with the Forest Department are attached for your review. We shall keep you informed of the progress in this regard. The request letter from Hindalco to Forest department, Forest Department's communication and our further communication to Forest department are attached as Annexure A2, A3, and A4 respectively.

Observation No.2: Contaminated water/ water ponding is observed in the reserved forest area along the boundary wall of the premises. One sample of the same is collected to check the contamination level. Take necessary action for the same.

Reply: We have observed severe rainfall (Almost two times to average yearly rainfall) in the region and September 2021 being the highest rainfall in any month. Therefore, the reserve forest area, which acts as catchment area to significant forest land, is observed with huge monsoon accumulation. The area is not approachable and full of grass land and water bodies. The photograph of the area is enclosed as **Annexure-B1**. As per our observation in earlier years, the natural evaporation for the entire area will take approximately five months. Therefore, we have requested forest department vide our letter dated 11.11.2021 to allow us to evacuate the monsoon accumulation in the Reserve Forest area (copy enclosed as **Annexure-B2**). Subsequent to the same, we have also submitted our application letter (dated 9th Dec, 2021) to Additional PCCF (Land) in Gandhinagar on 10th Dec, 2021, to grant us permission for soil amelioration and water evacuation from Reserve Forest Area. The copy of the letter is enclosed as **Annexure-B3**.

As soon as we get the permission from forest department, the water evacuation will take about a month and subsequently soil amelioration followed by plantation activities will start in supervision of forest department.

Observation no. 3: About 1200 new tree plantation is carried out by you adding northern boundary wall adjacent to the reserved forest. Complete the remaining tree plantation along northern boundary wall at the earliest.

Reply: We would also like to state that currently we have about 117 ha under Green Belt as per the statutory need.

As a part of our North-West side land development plan, we have started plantation along the boundary wall of Reserve Forest. As on today, we have fully completed the plantation activity at the boundary wall side and about 1500 Nos new trees have been planted. Photographs of plantation along the boundary wall side is enclosed as **Annexure-C**.

We are committed to abide by all the statutory rules and regulations under various environmental laws.

Sir, we remain available for any clarification that you may require. Please do offer an opportunity for personal hearing to put forward the explanations/clarifications provided by us.

Registered Office

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Website www.hindalco.com

Thanking you.
Yours faithfully,

For Hindalco Industries Limited,
Unit Birla copper Dahej



Dr. Sanjay Kumar
Head – Environment

Cc:

1. **Member Secretary**
Gujarat Pollution Control Board
Paryavaran Bhavan, Gandhinagar

Registered Office

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Fax: +91 2641 251002-3

Website www.hindalco.com



To,
Additional Principal Chief Conservator of Forest (Land)
Aranya Bhavan , Gandhinagar

15.12.2021

Sub: Action plan to evacuate in Reserve Forest Area adjacent to our boundary
Reference : 1. Order dated 18.11.2021 in OA No. 70/2021 filed before the Hon'ble National Green Tribunal, Western Bench, Pune
2. Our Letter dated 11.11.2021
3. Our Letter dated 09.12.2021

(Signature) 15-12-21
Dispatch Clerk
Addl. Pri. Chief Conservator of Forest
Land,
Gujarat State, Gandhinagar

Sir,

This refers to the abovementioned communication for permission to carry out soil amelioration and plantation in the Reserve Forest Area (tentatively 5 to 9 Ha area) adjacent to our northern side boundary.

As desired by you, please find below a tentative action plan:

SL.No.	Details of Activity	Tentative duration (in Weeks)
1	Evacuation accumulated rainwater and natural drying of top soil	5-7
2	Area cleaning	2
3	Site investigation by expert team for establishing sampling locations	1
4	Drilling team Mobilization and Depth discrete sampling	3
5	Sample forwarding Lab and receipt analysis data	3
6	Report preparation and further action plan development for soil amelioration and plantation	2
7	Submission of Action plan development for soil amelioration and plantation	2
8	Post approval of action plan, start of plantation activities	2

The photograph of the proposed site in the reserve forest area is also enclosed as **Annexure-A** for your ready reference.

(Signature) 15/12/21
Gujarat Pollution Control Board
Head Office
Sector No.-10-A,
Gandhinagar-382010

We request you to kindly grant us necessary permissions to carry out the activities mentioned in the above action plan.

We remain available for any further clarifications/suggestions from your end.

Thanking You

For Hindalco Industries Limited

Krishanu Mahapatra

**Krishanu Mahapatra
Assistant Vice President (Environment & Quality)**

CC:

- 1. The Principal Chief Conservator of Forest & HoFF
Aranaya Bhavan, Gandhinagar, Gujarat**
- 2. Assistant Conservator of Forest (A.C.F.),
Kanbiyaga, Bharuch**
- 3. Gujarat Pollution Control Board (GPCB),
Gandhinagar.**

15-12-2021
**Dispatch Clerk
Principal Chief Conservator of Forest
Gujarat State, Aranya Bhavan,
Gandhinagar-382010**

Annexure-A

The proposed site: Low-lying waterlogged area of Reserve Forest with Monsoon Accumulation (At left side)



Item No. 05

(Pune Bench)

**BEFORE THE NATIONAL GREEN TRIBUNAL
WESTERN ZONE BENCH, PUNE**

(By Video Conferencing)

Original Application No.70/2021 (WZ)

Brackish Water Research

Appellant(s)

Versus

Gujarat Pollution Control Board & Ors.

Respondent(s)

Date of hearing: 18.11.2021.

**CORAM: HON'BLE MR. JUSTICE M. SATHYANARAYANAN, JUDICIAL MEMBER
HON'BLE DR. ARUN KUMAR VERMA, EXPERT MEMBER**

Applicant: Ms. Shilpa Chouhan, Advocate for Applicant.

Respondent(s) Mr. Maulik Nanavati, Advocate for R-,2.
Mr. Aniruddha Kulkarni, Advocate for R-6.
Mr. Rahul Garg, Advocate for R-7
Mr. C.S. Vaidyanathan, Senior Advocate a/w
Mr. Ashish Prasad & Mr. Kausthub Mishra, Advocates for R-8.

ORDER

1. The Tribunal in continuation of the earlier order dated 27/10/2021, is passing the following order:-

2. Heard the submissions of Ms Shilpa Chouhan, learned Counsel appearing for the Applicant, Mr.C.S.Vaidyanathan, learned Senior Counsel, assisted by Mr. Ashish Prasad, learned Counsel appearing for the Project Proponent (PP)- 8th Respondent. The learned Senior Counsel appearing for the 8th Respondent would submit that 8th Respondent -PP has filed reply affidavit with Annexures A-8 to A-16 and responding to the same, the learned Counsel appearing for the Applicant, prays for short accommodation to respond to the same.

3. Mr. C.S. Vaidynathan, learned Senior Counsel appearing for the 8th Respondent would submit that whatever infractions/violations have been pointed out can be set right provided that the Forest Department should co-operate and also prays for appropriate directions.
4. Mr. Maulik Nanavati, learned Counsel appearing for the Respondent Nos. 1 and 2 would submit that inspection has been caused and the Reports have also been filed and prays for time to file reply-affidavit with supporting documents and also undertakes to serve same in advance a copy upon the learned Counsel appearing for the Applicant as well as the respective learned Counsels of the Respondents also.
5. Mr. Aniruddha Kulkarni, learned Counsel undertakes to enter appearance on behalf of the 6th Respondent and Mr. Rahul Garg, learned Counsel, appearing on behalf of the 7th Respondent, also pray for short accommodation to file reply affidavit with supporting documents.
6. Respondent Nos. 3,4 & 5 have been served and their names appear in the Cause List, however, there is no representation on their behalf.
7. Call on 05/01/2022 and by that time rejoinder affidavit to the reply affidavit of the 8th Respondent as well as reply affidavit of Respondent No.2 GPCB and reply affidavits by Respondent Nos. 1, 6 and 7 be filed.

M. Sathyanarayanan, JM

Dr. Arun Kumar Verma, EM

November 18, 2021
Original Application No.70/2021(WZ))hk

Analysis results of Stack analysis done by GPCB during visit dated 9th Dec-2021				
Sr no.	Stack attached to	Permissible limit	Analysis Results of GPCB	Remarks
1	Main Stack Sulphuric Acid Plant-I	Acid Mist : 25mg/Nm3	Acid Mist: 5 mg/Nm3	Well within limit
		SO2:2.0 Kg/T	SO2:1.92 Kg/T	Remained within limit through out
2	Main stack Secondary Gas Scrubber of Smelter-I	SO2: 40 mg/Nm3	SO2: 32.65 mg/Nm3	Well within limit
3	Centralized Scrubbing System Smelter-III	PM: 150 mg/Nm3	PM: 17 mg/Nm3	Remained within limit through out
		SO2: 40 mg/ Nm3	SO2: 3.6 mg/ Nm3	Well within limit

Note:

Out of 21 stacks only 03 stacks some spikes were observed but all were brought within limit immediately with corrective measures

Water sample collected by GPCB during Visit dated 09-12-2021				
Monsoon accumulation at Reserve forest area				
Sr no.	Parameters	Unit	GPCB Norms	Analysis results of GPCB
1	Temperature		NA	29
2	pH	-		6.41
3	Colour	um/m		40
4	Total Dissolved Solid	mg/l		3290
5	Total Suspended solid	mg/l		36
6	Ammonical Nitrogen	mg/l		8.96
7	Chloride	mg/l		770
8	Sulphate	mg/l		1069
9	Chemical Oxygen Demand	mg/l		65
10	Oil & Grease	mg/l		BDL
11	Phenolic Compound	mg/l		<0.1
12	Copper	mg/l		4.1
13	Biological Oxygen Demand	mg/l		12

Note:

There is no norms for surface water/ monsoon water accumulation outside plant boundary

Final Outlet ETP sample collected by GPCB during Visit dated 09-12-2021					
Sr no.	Parameters	Unit	GPCB Norms	Analysis results of GPCB	Remarks
1	Temperature		45	28	Remained within limit through out
2	pH	-	5.5 to 9	7.55	Remained within limit through out
3	Colour	um/m	100 units	10	Remained within limit through out
4	Total Dissolved Solid	mg/l	not given	5710	Remained within limit through out
5	Total Suspended solid	mg/l	100	68	Remained within limit through out
6	Ammonical Nitrogen	mg/l	50	BDL	Remained within limit through out
7	Chloride	mg/l	not given	3910	Remained within limit through out
8	Sulphate	mg/l	not given	235	Remained within limit through out
9	Chemical Oxygen Demand	mg/l	250	37	Remained within limit through out
10	Oil & Grease	mg/l	20	BDL	Remained within limit through out
11	Phenolic Compound	mg/l	5	BDL	Remained within limit through out
12	Copper	mg/l	3	0.401	Remained within limit through out
13	Biological Oxygen Demand	mg/l	100	9	Remained within limit through out

Note:

In ETP samples no issues were there except once, when COD was reported higher



ANALYSIS REPORT FOR AIR
TYPE : Ambient

Gujarat Pollution Control Board
29 1340
C-1/119/3, GIDC Phase-2
Narmadanagar
Bharuch-392015
Tele:(0264)2246333

Sample ID:319260 - Analysis Completion:22/12/2021

Copper Smelter / LAB Inward : 46224

1. Name & : Hindalco Industries Ltd - 15178
2. Address of the Unit : 2,10,11,43 GIDC,AT POST. DAHEJ-LAKHIGAM,TAL:VAGRA
DAHEJ - 392130,Taluka : Vagra, District : Bharuch, GIDC : Dahej
3. Nature of Sample : REP-Representative/Grab , (Insp Type : NOT-After Notice of DIR)
4. Sample Collected By : Shri B.D.Prasad,DEE
5. Date & Time of Collection & Receipt : 09/12/2021, (1430 to 2230)
6. Date of Start & Completion of Analysis : 10/12/2021 & 22/12/2021
7. Sampling Point : # Ambient Sampling Point ~ AAQM carried out at 16 acre area (behind Smelter-3, common
8. Fuel : ---
9. APCM : ---
10. Filter No & Weight : Filter paper no: 9/9983
11. Temperature on Collection : 29 & Volume-Absord Media : 25 ml for each gas
12. Volume-Gas Passed : For RSPM- 532.8 m3, For SOx & NOx- 213.84 ltr for every 4 hr
13. Parameters : 5 & Oper Time(Min) : 480

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	SOX-Amb	MICROG/M3	IS: 5182 (Part - 2), 2001 (reaffirmed 2006)	5 – 1050 µg/M3	0.583
2	MERCURY-Stack *	PPB	-	-	0.004 (mg/L)
3	NOX-Amb *	MICROG/M3	-	-	1.352
4	RSPM-Amb	MICROG/M3	IS:5182(Part- XXIII)	20-500µg/M3	114
5	Arsenic(As)-Amb	MICROG/M3	-	-	<0.01 (mg/L)

Laboratory Remarks : Mercury & Arsenic is reported in mg/L By:399-lab_399 Dt.:
22/12/2021


R.C.VASAVA,S.O

Field Observation :

Note :

1. The results relate only to the items sampled and tested.
2. Samples will be destroyed after 10 days from the date of issue of test report unless otherwise specified.
3. The report shall not be reproduced except in full or part without approval of the laboratory.
4. The Board is not responsible for the authenticity for the samples not collected by the Board's officials.
5. Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

*** END OF TEST REPORT ***



Sample ID:319280 - Analysis Completion:21/12/2021

Copper Smelter / LAB Inward : 46218

TEST REPORT

Test Report No. : 46218

Date: 21/12/2021

1. Name of the Customer : Hindalco Industries Ltd - 15178
2. Address : 2,10,11,43 GIDC,AT POST. DAHEJ-LAKHIGAM,TAL:VAGRA
DAHEJ-392130, Taluka : Vagra, District : Bharuch, GIDC : Dahej
3. Nature of Sample : REP-Representative/Grab, (Insp Type : NOT-After Notice of DIR)
4. Sample Collected By : Shri B.D.Prasad,DEE
5. Quantity of Sample Received : 5 lit
6. Code No. of the Sample : 319280
7. Date & Time of Collection & Inwarding : 09/12/2021 , (1755 to 1800) & 10/12/2021
8. Date of Start & Completion of Analysis : 10/12/2021 & 21/12/2021
9. Sampling Point : ## Final Outlet of the ETP ~ -
10. Flow Details (Remarks) : ---
11. Mode of Disposal : Arabian Sea through own pipeline
12. Ultimate Receiving Body : Deep sea though multiple diffuser system
13. Temperature on Collection : 28 & pH Range on pH Strip :7-8 on ph Strip
14. Carboys Nos for : barcode & Color & Appearance :Faint Yellowish
: Ind :38374.000 , Dom :2336.000 & Ind :4729.000 , Dom :1300.000
15. Water Consumption & W.W.G (KLPD) : 13 ,Cap No & Weight :

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	28
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	7.55
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	10
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	5710
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	68
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Stand	1 - 2000 mg/l.	BDL
7	Chloride	mg/l	Argentometric method. (4500 Cl? B APHA Standard M	1 - 50000 mg/l	3910
8	Sulphate	mg/l	APHA(23rd edi) 4500 SO4 E	2-40mg/l	235
9	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-20	5.0- 50000 mg/l	37
10	Oil & Grease	mg/l	Liquid – Liquid Partition Gravimetric method. (5520 B	01 – 1000 mg/l	BDL
11	Phenolic Compounds	mg/l	4 Amino Antiprene method without Chloroform Extra	0.1 – 50 mg/l	BDL
12	Copper	mg/l	3111 B APHA Standard methods 21st edi)	0.01-150 mg/l	0.401
13	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirme	05–50000 mg/l	9

Laboratory Remarks : Approved By:399-lab_399 Dt.: 21/12/2021

R.C.VASAVA,S.O

Note :

1. The results relate only to the items sampled and tested.
2. Samples will be destroyed after 10 days from the date of issue of test report unless otherwise specified.
3. The report shall not be reproduced except in full or part without approval of the laboratory.
4. The Board is not responsible for the authenticity for the samples not collected by the Board's officials.
5. Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

*** END OF TEST REPORT ***



Sample ID:319278 - Analysis Completion:21/12/2021

Copper Smelter / LAB Inward : 46217

TEST REPORT

Test Report No. : 46217

Date: 21/12/2021

1. Name of the Customer : Hindalco Industries Ltd - 15178
2. Address : 2,10,11,43 GIDC,AT POST. DAHEJ-LAKHIGAM,TAL:VAGRA
DAHEJ-392130, Taluka : Vagra, District : Bharuch, GIDC : Dahej
3. Nature of Sample : REP-Representative/Grab, (Insp Type : NOT-After Notice of DIR)
4. Sample Collected By : Shri B.D.Prasad,DEE
5. Quantity of Sample Received : 5 lit
6. Code No. of the Sample : 319278
7. Date & Time of Collection & Inwarding : 09/12/2021 , (1740 to 1745) & 10/12/2021
8. Date of Start & Completion of Analysis : 10/12/2021 & 21/12/2021
9. Sampling Point : Water ponding @ reserve forest area b/s boundary wall of unit ~
10. Flow Details (Remarks) : ---
11. Mode of Disposal : ---
12. Ultimate Receiving Body : Deep sea though multiple diffuser system
13. Temperature on Collection : 29 & pH Range on pH Strip :6-7 on ph strip
14. Carboys Nos for : barcode & Color & Appearance :Greenish
: Ind :38374.000 , Dom :2336.000 & Ind :4729.000 , Dom :1300.000
15. Water Consumption & W.W.G (KLPD) : 13 ,Cap No & Weight :

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	29
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	6.41
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	40
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	3290
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	36
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Stand	1 - 2000 mg/l.	8.96
7	Chloride	mg/l	Argentometric method. (4500 Cl? B APHA Standard M	1 - 50000 mg/l	770
8	Sulphate	mg/l	APHA(23rd edi) 4500 SO4 E	2-40mg/l	1069
9	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-20	5.0- 50000 mg/l	65
10	Oil & Grease	mg/l	Liquid – Liquid Partition Gravimetric method. (5520 B	01 – 1000 mg/l	BDL
11	Phenolic Compounds	mg/l	4 Amino Antipryrene method without Chloroform Extra	0.1 – 50 mg/l	< 0.1
12	Copper	mg/l	3111 B APHA Standard methods 21st edi)	0.01-150 mg/l	4.1
13	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirme	05–50000 mg/l	12

Laboratory Remarks : Approved By:399-lab_399 Dt.: 21/12/2021

R.C.VASAVA,S.O

Note :

1. The results relate only to the items sampled and tested.
2. Samples will be destroyed after 10 days from the date of issue of test report unless otherwise specified.
3. The report shall not be reproduced except in full or part without approval of the laboratory.
4. The Board is not responsible for the authenticity for the samples not collected by the Board's officials.
5. Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

*** END OF TEST REPORT ***



ANALYSIS REPORT FOR AIR
TYPE : Stack-Process

Gujarat Pollution Control Board
32 1343
Branch
C-1/119/3, GIDC Phase-2
Narmadanagar
Bharuch-392015
Tele:(0264)2246333

Sample ID:319273 - Analysis Completion:21/12/2021

Copper Smelter / LAB Inward : 46222

1. Name & : Hindalco Industries Ltd - 15178
2. Address of the Unit : 2,10,11,43 GIDC,AT POST. DAHEJ-LAKHIGAM,TAL:VAGRA
DAHEJ - 392130,Taluka : Vagra, District : Bharuch, GIDC : Dahej
3. Nature of Sample : REP-Representative/Grab , (Insp Type : NOT-After Notice of DIR)
4. Sample Collected By : Shri B.D.Prasad,DEE
5. Date & Time of Collection & Receipt : 09/12/2021, (1705 to 1715)
6. Date of Start & Completion of Analysis : 10/12/2021 & 21/12/2021
7. Sampling Point : Stack attached to Sulphuric acid plant -1. ~ -
8. Fuel : ---
9. APCM : 5 stage DCDA system and mist eliminator
10. Thimble & Weight (gm) : ---
11. Temperature on Collection : 29 & Volume-Absord Media : 50 ml H2O2 for SO2 & 50 ml Dist water for Acid Mist
12. Volume-Gas Passed : 19.6 ltr (NTP) gas passed for SO2 & Acid mist gases
13. Parameters : 2 & Oper Time(Min) : 10

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	ACID MIST-Stack	MG/NM3	Gravimetric method	-	5
2	SO2-Stack	KG/TON	IS:11255(Part-2),1985	4-50mg/NM3	1.92

Laboratory Remarks : Approved By:399-lab_399 Dt.: 21/12/2021

R.C.VASAVA,S.O

Field Observation :

Note :

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2. Samples will be destroyed after 10 days from the date of issue of test report unless otherwise specified.
3. The report shall not be reproduced except in full or part without approval of the laboratory.
4. The Board is not responsible for the authenticity for the samples not collected by the Board's officials.
5. Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

*** END OF TEST REPORT ***



ANALYSIS REPORT FOR AIR
TYPE : Stack-Process

Gujarat Pollution Control Board
33 1344
C-1/119/3, GIDC Phase-2
Narmadanagar
Bharuch-392015
Tele:(0264)2246333

Sample ID:319277 - Analysis Completion:21/12/2021

Copper Smelter / LAB Inward : 46223

1. Name & : Hindalco Industries Ltd - 15178
2. Address of the Unit : 2,10,11,43 GIDC,AT POST. DAHEJ-LAKHIGAM,TAL:VAGRA
DAHEJ - 392130,Taluka : Vagra, District : Bharuch, GIDC : Dahej
3. Nature of Sample : REP-Representative/Grab , (Insp Type : NOT-After Notice of DIR)
4. Sample Collected By : Shri B.D.Prasad,DEE
5. Date & Time of Collection & Receipt : 09/12/2021, (1725 to 1735)
6. Date of Start & Completion of Analysis : 10/12/2021 & 21/12/2021
7. Sampling Point : Stack attached to secondary gas scrubber of Smelter -1, plant. ~ -
8. Fuel : ---
9. APCM : Two stage alkali scrubber
10. Thimble & Weight (gm) : ---
11. Temperature on Collection : 29 & Volume-Absord Media : 50 ml H2O2 for SO2
12. Volume-Gas Passed : 2 lpm x 10 min= 20 ltr x 0.98 = 19.6 ltr (NTP) gas passed for SO2
13. Parameters : 1 & Oper Time(Min) : 10

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	SO2-Stack	MG/NM3	IS:11255(Part-2),1985	4-50mg/NM3	32.65

Laboratory Remarks : Approved By:399-lab_399 Dt.: 21/12/2021

R.C.VASAVA,S.O

Field Observation :

Note :

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2. Samples will be destroyed after 10 days from the date of issue of test report unless otherwise specified.
3. The report shall not be reproduced except in full or part without approval of the laboratory.
4. The Board is not responsible for the authenticity for the samples not collected by the Board's officials.
5. Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

*** END OF TEST REPORT ***



ANALYSIS REPORT FOR AIR
TYPE : Stack-Process

Gujarat Pollution Control Board
34 1345
C-1/119/3, GIDC Phase-2
Narmadanagar
Bharuch-392015
Tele:(0264)2246333

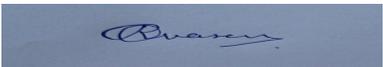
Sample ID:319266 - Analysis Completion:21/12/2021

Copper Smelter / LAB Inward : 46221

1. Name & : Hindalco Industries Ltd - 15178
2. Address of the Unit : 2,10,11,43 GIDC,AT POST. DAHEJ-LAKHIGAM,TAL:VAGRA
DAHEJ - 392130,Taluka : Vagra, District : Bharuch, GIDC : Dahej
3. Nature of Sample : REP-Representative/Grab , (Insp Type : NOT-After Notice of DIR)
4. Sample Collected By : Shri B.D.Prasad,DEE
5. Date & Time of Collection & Receipt : 09/12/2021, (1605 to 1635)
6. Date of Start & Completion of Analysis : 10/12/2021 & 21/12/2021
7. Sampling Point : Stack attached to centralized scrubbing system of smelter -III, ~ -
8. Fuel : ----
9. APCM : Bag filter+alkali scrubber
10. Thimble & Weight (gm) : Thimble No: 2/6308
11. Temperature on Collection : 30 & Volume-Absord Media : 50 ml H2O2 for SO2
12. Volume-Gas Passed : 470.40 ltr gas passed (NTP) for PM & 58.8 ltr (NTP) for SO2
13. Parameters : 2 & Oper Time(Min) : 30

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	PM-Stack	MG/NM3	IS: 11255 (Part – 1), 1985 (Reaffirmed 1999)	1 – 5000 mg/NM3	17
2	SO2-Stack	MG/NM3	IS:11255(Part-2),1985	4-50mg/NM3	3.26

Laboratory Remarks : Approved By:399-lab_399 Dt.: 21/12/2021


R.C.VASAVA,S.O

Field Observation :

Note :

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2. Samples will be destroyed after 10 days from the date of issue of test report unless otherwise specified.
3. The report shall not be reproduced except in full or part without approval of the laboratory.
4. The Board is not responsible for the authenticity for the samples not collected by the Board's officials.
5. Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

*** END OF TEST REPORT ***


 PCB ID: 15178
 Date :29.12.2021

 To,
Member Secretary
 Gujarat Pollution Control Board
 Gandhinagar

Sub: Intimation regarding appointment of M/s. ERM for soil amelioration activities at in Reserve Forest Area adjacent to our boundary

Reference :

1. Order dated 18.11.2021 in OA No. 70/2021 filed before the Hon'ble National Green Tribunal, Western Bench, Pune
2. Our Letter dated 09.12.2021 addressed A.P.C.C.F. (Land) , Gandhinagar
3. Our Letter dated 15.12.2021 addressed A.P.C.C.F. (Land), Gandhinagar
4. Our detailed reply to the Notice of Direction issued on 30.11.2021

Sir,

This refers to the above mentioned trail of communications seeking permission to carry out soil amelioration activities at in Reserve Forest Area adjacent to our northern side boundary.

As requested, this is to inform you that we have explored the opportunity to appoint the globally renowned expert M/s. ERM India Private Limited vide Letter of Intent (LOI) dated [17-12-2021] to carry-out the requisite soil study in the Reserve Forest Area adjacent to our northern side boundary.(copy of the LOI is attached as

Enclosure-1)

The overall plan for the soil amelioration is detailed as follows:

1. Considering the approximate area under study would be 5 to 10 Ha, the entire area would be divided into multiple grids for M/s. ERM to conduct a detailed soil sample study.
2. In each grid, through boring methodology soil samples shall be collected at different depth levels for understanding the quality and constituents.
3. Parallel to the above mentioned activities, a site contour survey shall be conducted to establish the topography.
4. Soil chemical analysis results shall be analyzed along with topography data to develop cross-sectional drawings. Based on these analysis, M/s ERM would provide their recommendations for area cleaning, extent of soil removal and any in situ treatment required.
5. As per the suggestions/findings of the report, soil removal shall be carried out which in-turn will be disposed in Captive Secured Landfill in line with CPCB guidelines.

HINDALCO INDUSTRIES LIMITED

(UNIT : BIRLA COPPER)

P.O. : Dahej, Dist. Bharuch,

Gujarat-392 130, INDIA.

Telephone +91 2641 256004-6

Fax +91 2641 251002-3

Regd. Ahura Centre, 1st Floor, B-Wing,

Mahakali Caves Road, Andheri (East), Mumbai 400 093

Telephone +91 22 6691 7000 / Fax : +91 22 6691 7001

Website

www.hindalco.com

Email

hindalco@adityabirla.com

Corporate Identity No. L27020MH1958PLC011238

6. Soil remediation activities that have to be carried out in-situ shall be initiated as per the recommendations and plantation of identified species would be done parallelly.

It is pertinent to mention that to carry out these activities, the accumulated monsoon water from last monsoon showers has to be evacuated. The water that will be evacuated after due approval from the Forest Department shall be treated in Effluent Treatment Plant (ETP).

We seek your guidance and support in the matter.

We remain available for any further clarifications/suggestions from your end.

Thanking You

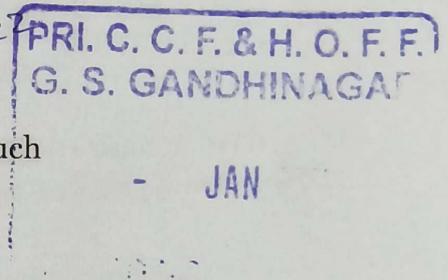
**For Hindalco Industries Limited
Unit: Birla Copper, Dahej**



**Dr. Sanjay Kumar
Head (Environment)**

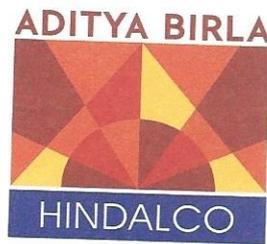
Copy to :

1. Additional Principal Chief Conservator of Forest (Land)
Aranya Bhavan , Gandhinagar, Gujarat
2. The Principal Chief Conservator of Forest & HoFF
Aranaya Bhavan, Gandhinagar, Gujarat
3. The Regional Officer- Gujarat Pollution Control Board, Bharuch
4. Assistant Conservator of Forest (A.C.F.), Kanbiyaga, Bharuch



Enclosures:

1. Copy of Letter of Intent (LOI) entered with M/s. ERM – **Enclosure-1**
2. Copy of all the trail communications as mentioned in References- **Enclosure-2**



Dr. Yogesh Kumar
 Scientist "C"
 MoEFCC
 Integrated Regional Office
 A Wing , 'Aranya Bhawan'
 Gandhinagar, (Gujarat)

04.01.2022

Sub: Submission of requisite documents

Sir,

As desired by you , please find enclosed the following documents for your perusal :

1. Month wise PM, SOx and NOx data in tabular form of last six months
2. OCEMS and last six months data and list of parameters and stacks list including online and offline
3. All Environment control equipment's, scrubber, ESPs, Bag filters etc number of installation and its data
4. Process brief details about existing scrubbers to reduce SO2 emission
5. Photograph of drinking water facilities at plants
6. Plant internal road dimensions' details and storm water drainage connection and interlink with ETP
7. Water saving plan write up 1 pager
8. Ground water and ETP inlet water 3rd party report
9. GIDC Bill
 - 9.1 Water consumption
10. All details of Generation, Storage and disposal of solid/hazardous waste
11. Fly ash generation, storage and disposal all details
 - 11.1 Fly ash Invoice
12. Greenbelt photographs
13. Last 3 years CSR and ESC cost towards project
14. All 4 CAQMS stations location
15. Last 3 years six monthly report submitted report date to MoEFCC Bhopal
16. DG set photographs
17. Carbon sequestration quantum of CO2 generation, carbon sinks- details
18. OHC form 32 with medical report of newly joined employees of last six months
19. Justification for water harvesting non compliance
20. Compliance upload on Parivesh website
21. Maingate display board photograph
22. EC clearance publication/News paper cutting- CCR-3
23. Financial closure certificate CCR3
24. Capital and recurring cost of the pollution control equipment
25. Number of solar lights installed
26. Brief process details of TWRU
27. Water sprinkling system of internal roads
28. Forest Diversion-16 Ha
29. Form 5

- 30. GPCB NOD reply- 30.11.2021
30.1 NOD – BG Copy
- 31. Risk and disaster management plant
- 32. Upliftment activities

We remain available for any further clarifications/ support from our end.

For Hindalco Industries Limited



Dr. Sanjay Kumar
Assistant Vice President- Environment

CC: Integrated Regional Officer (IRO)
MOEF &CC , Integrated Regional Office
A Wing , 'Aranya Bhawan'
Gandhinagar , (Gujarat)

Main Stack Sulphuric acid plant -1		
Month	SO2 kg/T	Acid Mist mg/Nm3
GPCB Limit	2	25
Apr-21	0.70	0
May-21	0.64	0
Jun-21	0.67	0
Jul-21	0.72	0
Aug-21	0.65	0
Sep-21	0.63	0
Oct-21	0.68	0
Nov-21	0.64	0
Average	0.67	0.00

Main Stack Slag Cleaning furnace		
Month	SO2 mg/Nm3	SPM mg/Nm3
GPCB Limit	40	150
Apr-21	22.85	48.57
May-21	19.42	53.31
Jun-21	22.06	35.42
Jul-21	18.02	40.98
Aug-21	21.47	52.39
Sep-21	23.94	36.11
Oct-21	20.48	20.86
Nov-21	17.14	46.20
Average	20.67	

Central Scrubbing System CU-III		
Month	SO2 mg/Nm3	SPM mg/Nm3
GPCB Limit	40	150
Apr-21	0.00	0.00
May-21	0.00	0.00
Jun-21	17.11	20.40
Jul-21	19.67	18.63
Aug-21	17.20	21.50
Sep-21	20.75	17.07
Oct-21	18.36	22.98
Nov-21	15.82	22.89
Average	13.61	15.43

Steam Dryer of Copper concentrate SM-1		
Month	SO2 mg/Nm3	SPM mg/Nm3
GPCB Limit	40	150
Apr-21	0	19.83
May-21	0	24.69
Jun-21	0	15.85
Jul-21	0	21.92
Aug-21	0	13.01
Sep-21	0	23.66
Oct-21	0	30.65
Nov-21	0	12.68
Average	0	20.29

Main Stack Sulphuric acid plant -3		
Month	SO2 kg/T	Acid Mist mg/Nm3
GPCB Limit	1	25
Apr-21	0.00	0.00
May-21	0.00	0.00
Jun-21	0.02	0.00
Jul-21	0.08	0.00
Aug-21	0.07	0.00
Sep-21	0.12	0.00
Oct-21	0.10	0.00
Nov-21	0.13	0.00
Average	0.07	0.0

Cathode stripping M/c Refinery-III	
Month	SO2 mg/Nm3
GPCB Limit	40
Apr-21	0
May-21	0
Jun-21	0
Jul-21	0
Aug-21	0
Sep-21	0
Oct-21	0
Nov-21	0
Average	0

Dore Furnace of PMR			
Months	SO2	Nox	SPM
	ppm	ppm	mg/Nm3
GPCB Limit	100	50	150
Apr-21	25.43	16.30	31.16
May-21	21.51	12.50	17.39
Jun-21	27.36	13.80	21.64
Jul-21	19.07	10.81	26.44
Aug-21	15.04	11.40	28.57
Sep-21	24.59	12.60	20.14
Oct-21	20.29	13.62	30.17
Nov-21	17.76	12.02	23.72
Average	21.38	12.88	24.90

SAP-1 Pre Heater				CCR-I			
Months	SO2	Nox	SPM	Months	SO2	Nox	SPM
	ppm	ppm	mg/Nm3		ppm	ppm	mg/Nm3
GPCB Limit	100	50	150	GPCB Limit	100	50	150
Apr-21	53.92	12.80	19.01	Apr-21	0	0	24.88
May-21	46.32	9.40	13.74	May-21	0	0	19.9
Jun-21	33.70	13.00	16.01	Jun-21	0	0	27.57
Jul-21	39.20	9.51	11.62	Jul-21	0	0	34.36
Aug-21	35.99	11.01	14.59	Aug-21	0	0	21.07
Sep-21	45.49	12.12	15.65	Sep-21	0	0	25.46
Oct-21	47.81	9.81	18.38	Oct-21	0	0	38.69
Nov-21	52.32	11.32	20.38	Nov-21	0	0	30.8
Average	44.34	11.12	16.17	Average	0	0	27.84

Slag Granulation	
Month	SPM
	mg/Nm3
GPCB Limit	150
Apr-21	26.84
May-21	20.77
Jun-21	29.72
Jul-21	22.66
Aug-21	27.61
Sep-21	23.01
Oct-21	18.88
Nov-21	31.63
Average	25.14

CCR-III			
Months	SO2	Nox	SPM
	ppm	ppm	mg/Nm3
GPCB Limit	100	50	150
Apr-21	0	0	22.3
May-21	0	0	29.49
Jun-21	0	0	23.37
Jul-21	0	0	24.65
Aug-21	0	0	20.99
Sep-21	0	0	26.8
Oct-21	0	0	21.24
Nov-21	0	0	32.13
Average	0	0	24.86

SAP-3 Pre Heater				PMR-Phase-III			
Months	SO2	Nox	SPM	Month	SO2	Nox	SPM
	ppm	ppm	mg/Nm3		mg/Nm3	mg/Nm3	mg/Nm3
GPCB Limit	100	50	150	GPCB Limit	40	25	150
Apr-21	0	0	0	Apr-21	19.27	6.30	20.02
May-21	0	0	0	May-21	20.58	7.50	16.53
Jun-21	35.68	9.40	18.98	Jun-21	16.84	0.00	11.35
Jul-21	36.94	14.30	14.1	Jul-21	18.18	9.80	22.66
Aug-21	44.76	12.40	11.57	Aug-21	17.39	5.50	19.83
Sep-21	49.85	11.01	16.39	Sep-21	15.4	6.60	26.61
Oct-21	38.02	9.81	12.88	Oct-21	29.76	8.60	24.13
Nov-21	51.51	11.82	10.65	Nov-21	18.93	9.40	23.62
Average	32.09	8.59	10.57	Average	19.54	6.7125	20.59

Cathode stripping M/c plant-Refinery-I	
Month	SO2
	mg/Nm3
GPCB Limit	40
Apr-21	0
May-21	0
Jun-21	0
Jul-21	0
Aug-21	0
Sep-21	0
Oct-21	0
Nov-21	0
Average	0

CPP-I			
Months	SO2	Nox	SPM
	mg/Nm3	mg/Nm3	mg/Nm3
GPCB Limit	600	600	100
Apr-21	108.84	26.69	29.34
May-21	118.12	20.5	32.32
Jun-21	105.96	22.59	28.6
Jul-21	103.22	24.64	39.65
Aug-21	96	23	43.23
Sep-21	119.72	26.7	47.39
Oct-21	123.87	20.53	35.36
Nov-21	139.59	25.67	41.24
Average	114.41	23.79	37.14

CPP-III				Anode casting			
Month	SO2	Nox	SPM	Month	SO2	Nox	SPM
	mg/Nm3	mg/Nm3	mg/Nm3		mg/Nm3	mg/Nm3	mg/Nm3
GPCB Limit	600	600	100	GPCB Limit	40	25	150
Apr-21	0	0	0	Apr-21	0.00	0.0	14.21
May-21	107.38	24.64	36.78	May-21	0.00	0.0	17.76
Jun-21	134.19	22.58	31.08	Jun-21	0.00	0.0	15.85
Jul-21	115.03	26.69	41.25	Jul-21	0	0	13.01
Aug-21	104.57	21.97	48.85	Aug-21	0	0	21.40
Sep-21	130.61	25.46	24.88	Sep-21	0	0	18.75
Oct-21	136.84	24.02	18.95	Oct-21	0	0	23.69
Nov-21	149.34	27.32	43.23	Nov-21	0	0	20.10
Average	109.74	21.59	30.63	Average	0	0	18.10

Main Stack Secondary Gas Scrubber	
Month	SO2
	mg/Nm3
GPCB Limit	40
Apr-21	23.81
May-21	24.39
Jun-21	18.49
Jul-21	21.20
Aug-21	19.27
Sep-21	20.58
Oct-21	17.87
Nov-21	22.45
Average	21.01

Location: Birla Copper Township AAQMS				
Parameters	PM ₁₀	PM _{2.5}	SO ₂	NO _x
GPCB Norms	100 µg/m ³	60 µg/m ³	80 µg/m ³	80 µg/m ³
Apr-21	41.80	29.80	25.64	11.55
May-21	45.66	31.31	23.58	10.33
Jun-21	42.38	30.39	22.51	14.44
Jul-21	46.28	32.57	24.41	12.19
Aug-21	41.66	30.21	21.82	23.28
Sep-21	43.30	33.18	25.60	11.36
Oct-21	44.63	34.27	25.83	11.14
Nov-21	47.57	35.73	26.39	15.33
AVERAGE	44.16	32.18	24.31	13.70

Location:Near Dahej Village AAQMS				
Parameters	PM ₁₀	PM _{2.5}	SO ₂	NO _x
GPCB Norms	100 µg/m ³	60 µg/m ³	80 µg/m ³	80 µg/m ³
Apr-21	45.57	32.35	26.72	8.53
May-21	47.08	33.23	28.13	13.22
Jun-21	41.27	31.41	25.51	12.52
Jul-21	42.88	30.53	27.69	11.25
Aug-21	46.56	29.55	24.57	9.56
Sep-21	45.10	32.28	26.76	8.72
Oct-21	47.69	35.18	27.54	10.61
Nov-21	43.36	34.37	24.64	13.54
AVERAGE	44.94	32.36	26.45	10.99

Location: Birla Copper Jetty AAQMS				
Parameters	PM ₁₀	PM _{2.5}	SO ₂	NO _x
GPCB Norms	100 µg/m ³	60 µg/m ³	80 µg/m ³	80 µg/m ³
Apr-21	43.24	30.54	24.29	10.59
May-21	46.87	34.26	27.69	12.71
Jun-21	44.41	32.93	26.29	11.32
Jul-21	45.57	31.61	25.71	13.67
Aug-21	42.43	33.55	23.24	10.58
Sep-21	47.64	35.37	22.43	14.43
Oct-21	43.46	29.09	24.75	10.61
Nov-21	46.50	30.40	27.48	12.47
AVERAGE	45.02	32.22	25.24	12.05

Location:Near Lakhigam Village AAQMS				
Parameters	PM ₁₀	PM _{2.5}	SO ₂	NO _x
GPCB Norms	100 µg/m ³	60 µg/m ³	80 µg/m ³	80 µg/m ³
Apr-21	44.71	28.46	23.75	7.76
May-21	41.66	27.75	20.61	7.74
Jun-21	40.27	33.44	21.22	13.47
Jul-21	47.32	34.51	22.25	14.24
Aug-21	45.74	31.62	25.26	12.51
Sep-21	44.74	28.03	24.66	10.72
Oct-21	48.13	31.26	25.88	11.16
Nov-21	42.64	29.48	23.85	11.21
AVERAGE	44.40	30.57	23.44	11.10

Sr. No.	Stack Name	Parameter	UOM	Month					
				Jun'21	Jul'21	Aug'21	Sep'21	Oct'21	Nov'21
1	Dore Furnace of PMR Plant	PM	mg/Nm3	17.4	19.12	14.12	17.87	19.34	16.62
		SO ₂	ppm	2.19	2.19	1.09	2.06	2.98	3.1
2	Suphuric Acid Preheater-I	PM	mg/Nm3	9.2	10.12	8.8	9.2	9.34	8.8
		SO ₂	ppm	18.3	27.06	50.6	75.66	12.5	11.99
3	Suphuric Acid Preheater-III	PM	mg/Nm3	0.02	0.03	0.02	0.05	0.02	0.03
		SO ₂	ppm	0.19	0.34	0.87	0.35	0.57	0.54
4	Captive Power Plant (CPP-I) CFBC Boiler 35 MW	PM	mg/Nm3	47.79	49.67	46.87	43.72	46.05	48.57
		SO ₂	ppm	82.98	56.78	71.87	80.75	82.35	82.11
		No _x	ppm	0.96	0.95	0.94	0.94	10.58	10.72
5	Shaft Furnace of CCR Plant-I	PM	mg/Nm3	16.2	18.43	19.87	29.43	27.35	34.98
		SO ₂	ppm	4.4	6.9	4.2	7.4	5.2	9.1
6	Captive Power Plant (CPP-III) CFBC Boiler 60 MW	PM	mg/Nm3	29.1	22.46	22.77	24.87	24.33	20.53
		SO ₂	ppm	32.43	37	37.48	40.74	40.08	60.10
		No _x	ppm	32.21	27.18	27.36	25.87	29.42	24.88
7	Main Stack Secondary Gas Scrubber of Smelter-I	SO ₂	mg/Nm3	1.99	2.01	2.01	7.02	7.01	20.35
8	Main Stack Slag Cleaning Furnace of Smelter-I	PM	mg/Nm3	50.21	51.63	48.73	49.18	49.42	46.79
		SO ₂	mg/Nm3	15.2	2.03	2.01	10.07	10.72	10.09
9	Main Stack Sulphuric Acid Plant-I	SO ₂	ppm	20.89	20.47	20.53	20.91	65.93	66.88
10	Slag Granulation of Smelter-I	PM	mg/Nm3	5.7	2.9	3.7	3.9	3.8	3.9
11	Steam Dryer of Copper concentrate of Smelter-I	PM	mg/Nm3	29.81	26.22	19.07	20.98	26.01	28.98
		SO ₂	mg/Nm3	6.1	3.95	3.8	4.06	3.89	3.87
12	Centralized Scrubbing System Smelter-III	PM	mg/Nm3	7.76	15.82	19.71	15.18	15.15	16.17
		SO ₂	mg/Nm3	30.2	28.76	21.67	13.26	13.18	19.87
13	Sulphuric Acid Plant-III	SO ₂	ppm	13.2	17.87	15.28	19.46	14.34	17.54
14	PMR Plant Phase III	PM	mg/Nm3	29.3	30.1	31.23	26.74	25.89	29.93
		SO ₂	mg/Nm3	3.68	3.63	3.79	3.81	3.98	4.1
15	Slag Cleaning Furnace (By pass vent) of Smelter-1	PM	mg/Nm3	5.9	2.08	3.9	4.2	3.39	3.76
		SO ₂	mg/Nm3	34.32	13.65	23.45	39	22.36	19.2

Bag Filter at Birla Copper			
Plant	Sr. No.	Location	Air Pollution Control Device
Smelter-1	1	Steam Dryer for copper concentrate. (1)	Bag Filter
	2	Steam Dryer for copper concentrate. (1A)	Bag Filter
	3	Pneumatic Bag Filter/ Concentrate Bag Filter	Bag Filter
	4	Dust bag filter at 42 mts	Bag Filter
	5	Main Stack Slag cleaning Furnace	Bag Filter
Smelter-3	6	Dryer for copper concentrate Compartment	Bag Filter
	7	Feeding Circuit of Smelter-3	Bag Filter
	8	Ventilation Hygiene Bag House Smelter-3	Bag Filter
PMR	9	Dore Furnace-1 of PMR Plant	Bag Filter
	10	Dore Furnace-2 of PMR Plant	Bag Filter
	11	Dore Furnace-3 of PMR Plant	Bag Filter
CPP-1	12	Main Silo (Fly Ash)	Bag Filter
	13	Inter Silo at Boiler 1	Bag Filter
	14	Inter Silo at Boiler 2	Bag Filter
CPP-3	15	Main Silo (Fly Ash)	Bag Filter
	16	Inter Silo at Boiler 3	Bag Filter
	17	Inter Silo at Boiler 4	Bag Filter

ESP at Birla Copper		
Sr. No.	Plant	Air Pollution Control Device
1	Smelter-1 HOT ESP 34 Esp Converter Waste Heat Recovery Boiler	ESP
2	Smelter-1 HOT ESP 31 Esp FSF Waste Heat Recovery Boiler	ESP
3	Wet ESP at SAP-1	ESP
4	S ESP Smelter-3	ESP
5	C ESP Smelter-3	ESP
6	Wet ESP at SAP-3	ESP
7	CFBC Boiler (CPP-I)	ESP
8	Captive Power plant (CPP 3)	ESP

Scrubber at Birla Copper		
Sr. No.	Plant	Air Pollution Control Device
1	Main Stack Secondary Gas Scrubber	Two stage alkali Scrubber
2	Centralized Scrubbing System Cu-III	Bag Filter +alkali Scrubber
3	Sulphuric Acid Plant-3	Tail Gas Scrubber

Bag Filter at Birla Copper			
Plant	Sr. No.	Location	Air Pollution Control Device
Smelter-1	1	Steam Dryer for copper concentrate. (1)	Bag Filter
	2	Steam Dryer for copper concentrate. (1A)	Bag Filter
	3	Pneumatic Bag Filter/ Concentrate Bag Filter	Bag Filter
	4	Dust bag filter at 42 mts	Bag Filter
	5	Main Stack Slag cleaning Furnace	Bag Filter
Smelter-3	6	Dryer for copper concentrate Compartment	Bag Filter
	7	Feeding Circuit of Smelter-3	Bag Filter
	8	Ventilation Hygiene Bag House Smelter-3	Bag Filter
PMR	9	Dore Furnace-1 of PMR Plant	Bag Filter
	10	Dore Furnace-2 of PMR Plant	Bag Filter
	11	Dore Furnace-3 of PMR Plant	Bag Filter
CPP-1	12	Main Silo (Fly Ash)	Bag Filter
	13	Inter Silo at Boiler 1	Bag Filter
CPP-3	14	Inter Silo at Boiler 2	Bag Filter
	15	Main Silo (Fly Ash)	Bag Filter
	16	Inter Silo at Boiler 3	Bag Filter
	17	Inter Silo at Boiler 4	Bag Filter

ESP at Birla Copper		
Sr. No.	Plant	Air Pollution Control Device
1	Smelter-1 HOT ESP 34 Esp Converter Waste Heat Recovery Boiler	ESP
2	Smelter-1 HOT ESP 31 Esp FSF Waste Heat Recovery Boiler	ESP
3	Wet ESP at SAP-1	ESP
4	S ESP Smelter-3	ESP
5	C ESP Smelter-3	ESP
6	Wet ESP at SAP-3	ESP
7	CFBC Boiler (CPP-I)	ESP
8	Captive Power plant (CPP 3)	ESP

Scrubber at Birla Copper		
Sr. No.	Plant	Air Pollution Control Device
1	Main Stack Secondary Gas Scrubber	Two stage alkali Scrubber
2	Centralized Scrubbing System Cu-III	Bag Filter +alkali Scrubber
3	Sulphuric Acid Plant-3	Tail Gas Scrubber

Hindalco Industries LTD.**Unit: Birla Copper, Dahej****Process Detail of Scrubbers**

We have installed scrubber to take care of lean SO₂ gases during off load conditions of smelting furnaces and off gases after SAP process. The De-sulphurization system is designed for cleaning Ventilation gases and Dryer off gases. Scrubbers are installed at the following locations: -

1. Smelter-1
2. Smelter-3
3. Sulphuric Acid Plant -TGS-3.

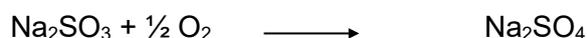
Scrubbers installed in our facility uses Caustic lye as scrubbing media.

Operations:

Gases from the sources are fed into the scrubber using an ID fan The Saturated gases enter the Scrubber at bottom and travel upward. Circulating scrubber fluid is sprayed in counter current fashion in this tower by means of spray nozzles. The circulating fluid absorbs SO₂ from flue gas. The alkaline solution reacts with the flue gas forming sodium sulfite and sodium-bi-sulphite. The reaction taking place in the SO₂ scrubber is as follows:



Simultaneously some sodium sulfite (Na₂SO₃) reacts with oxygen in the flue gases to produce sodium sulphate (Na₂SO₄). Completion of this reaction depends upon the oxygen present in the gas.



The scrubbing fluid is collected at bottom recycle tank of scrubber, which is re-circulated by means of re-circulating pumps. The pH of scrubbing liquor is measured at discharge of pump and caustic soda (sodium hydroxide, NaOH, (40-50% caustic lye) is fed to the scrubber recycle tank, to maintain the pH value between 6-7.

The cleaned gases from the SO₂ scrubber pass upward in the scrubber over mist eliminators (ME, droplet separator) to separate entrained droplets from saturated gas. Thus clean gases then leave the scrubber at top and are lead to the exhaust stack mounted on outlet of scrubber.

Hindalco Industries LTD.**Unit: Birla Copper, Dahej****Drinking Water Facility**

1. List of Water Filters with water coolers in Plant

S. No.	Particulars	Location (Available or Not)	Qty
1	SMELTER	ANODE CASTING	1
2	Smelter I	CONTROL ROOM	1
3	SMELTER	17 mtr Platform	1
4	SMELTER	7mtr Platform	1
5	REFINERY	1ST FLR Nr.control room	1
6	REFINERY-I	1ST FLR	1
7	REFINERY -II	1ST FLR	1
8	REFINERY-III	NEAR CONTROL ROOM	1
9	REFINERY-III	EXECUTIVE BLOCK	1
10	REFINERY-III	Plant side	1
11	SAP-III	NEAR CONTROL ROOM	1
12	SAP-III	G floor	1
13	SMELTER-III	control room	1
14	SMELTER-III	2nd floor	1
15	SMELTER-III	C-Furnace	1
16	RMH-III	Bagging Plant	1
17	SMELTER-III	Anode Casting	1
18	SMELTER-III	Anode Furnace	1
19	SMELTER-III	Porta Cabin	1
20	SMELTER-III	Boiler area	1
21	STP	G floor	1
22	RMH_I	1st floor Terrace	1
23	PAP	G floor	1
24	DAP	CONTROL ROOM	1
25	SAP	2ND FLR	1
26	SAP-	Lab	1
27	Refractory stores	in side stores	1
28	COAL PLANT	behind control room open area	1
29	Fabrication Yard	Near Gupta circle	1
30	OXYGEN	G'FLOOR (compressor house)	1
31	CPP	2ND FLR	1
32	WTP/ETP	1st floor	1
33	RO Plant	Ground floor	1
34	CPP_III	G floor	1
35	ENGG BOLCK	GR.FLR/CHG ROOM	1
36	ENGG BOLCK	Pantry	1
37	PMR	Security cabin	1
38	CCR-I	1st floor control room	1
39	TT3	conveyer cabin area	1
40	PMR	Gold area	1
41	CCR	G'FLOOR	1
42	CCR-III	G floor	1
43	CCR-III	1st flor	1
44	Jetty	G'FLOOR	1
45	Jetty	1ST FLOOR	1

46	RBD	Near office / rolling machine	1
47	Outer Gate	Near Security Cabin	1
48	New Punching gate	Opposite side Oxygen	1
49	Gate No-06	Near Truck parking area	1
50	Commercial Weigh Bridge	Near toilet block area	1
51	Welfare Building	Canteen	2
52	Welfare Building	Labour canteen	1
53	Welfare Building	GJST	1
54	TECH BLOCK	G'FLOOR (R&D LAB)	1
55	TECH BLOCK	Pantry	1
56	WAREHOUSE	G'FLOOR	1
57	WAREHOUSE	G'FLOOR	1
58	Old punching gate	Near Parking Area	1
		Total	59

2. Water Cooler



Plant Canteen



Punch Gate

Hindalco Industries LTD.**Unit: Birla Copper, Dahej****Plant Internal Road Details**

Sr.No	Road No.	Length (M)	Width (M)
1	Factory gate- Value Circle	992	7
2	Factory gate- Value Circle	992	7
3	1	946	14
4	2	474	8
5	3	630	9
6	4	316	8
7	5	568	7
8	5A	212	6.5
9	5B	212	6.5
10	6	316	7
11	6A	209	8
12	7	149	7
13	8	209	4
14	9	772	13
15	9A	89	6
16	10	291	8
17	11	2500	6
18	12	277	6
19	14	474	6
20	15	946	7
21	16	946	7
22	17	276	7
23	18	73	7
24	19	128	8
25	19A	50	6
26	20	1414	7
27	21	250	7
28	22	89	8
29	23	102	5
30	23A	43	5
31	24	105	5
32	25	108	9
33	25A	48	6
34	Gupta Circle- Value Circle Road	650	7
35	Gupta Circle- Value Circle Road	650	7
36	Gupta Circle- Commercial Weigh Bridge road	950	7
37	Commercial Weigh bridge road	450	7
38	Gate 5- Weigh Bridge Road	450	7
	TOTAL	18356	

Interlinks to ETP

Interlink with ETP	
S. No.	Following areas have dedicated interlink facility connected to ETP-RET
1	Sulphuric Acid Plant-1
2	Sulphuric Acid Plant-3
3	Refinery-1
4	Refinery-3
5	Continuous Cast Rod Plant-1
6	Continuous Cast Rod Plant-1
7	Precious Metal Recovery Plant
8	Captive Power Plant

Hindalco Industries LTD.

Unit: Birla Copper, Dahej

Water Saving Scheme

Birla Copper, Hindalco's copper unit, is located at Dahej in the Bharuch district of Gujarat. This is one of the largest single-location copper smelters in the world with integrated port facilities. Dahej Harbor and Infrastructure Limited (DHIL) is strategically located to cater to the logistics and transportation needs of its customers. The copper unit at Dahej comprises copper smelters, backed by a captive power plant, oxygen plants, by-products plants, utilities and a captive jetty. There is also a precious metals recovery plant at Dahej, which produces gold, silver and selenium.

Water is sourced from Gujrat Industrial Development Corporation (GIDC). The Water consumption for the process area is approximately 24000 KLD out of which approx. 21500 is consumed from GIDC and balance 3500 is consumed from the recycling of effluent.

We have already made efforts to conserve the water from different aspects.

1. The installation of Reverse Osmosis process at the tail end of the ETP which has result to recycle approx. 15% of total water.
2. Recycling of plant STP treated water approx., 300 KLD (200KLD in process + 100 KLD in plantation)
3. Metering at source and consumption
4. Replacement of old pipelines with new one

We are also in process to adopt the following initiatives for conservation of water:

1. Installation of a Tertiary Water Recycling Unit (TWRU) which will result in the saving of another 700 KLD water. The plant is already constructed and ready for commission.
2. Cooling tower blowdown water treatment and recycling which will result in additional 450 KLD of water recycling
3. We have invested in GIDC-Desalination plant which will result in 10,000 KLD fresh water reduction.



ANNEXURE -XI(Cont.)
DETAILS OF QUALITY OF TRADE EFFLUENT

Date : 28-06-2016

Mode of Collection: Grab

Parameter	Sample No.						GPCB Norms mg/L
	1.	2.	3.	4.	5.	6	
pH	0.97	7.53	0.57	6.17	6.97	7.18	5.5 to 9
Temperature	29	28	30	29	28	--	45
Colour (pt.Co. scale)	156	87	189	67	80	Nil	100
TSS	247	47	650	18	20	181	100
TDS	431000	4150	187500	3420	3010	2690	--
COD	780	23.1	371	87.7	27	18	250
BOD (3D @ 27°C)	68	Nil	52	Nil	Nil	Nil	100
O & G	Nil	Nil	Nil	Nil	Nil	Nil	20
Phenolic Compound	--	--	--	--	Nil	--	5.0
Ammonical Nitrogen	41.23	12.47	8.74	Nil	16.3	Nil	50
Sulfides	--	--	--	--	Nil	--	5.0
Cyanides	--	--	--	--	Nil	--	0.2
Fluoride	--	--	--	--	0.896	--	10
Cr ⁺⁶	--	--	--	--	0.41	--	1.0
Total chromium	--	--	--	--	0.68	--	2.0
Copper	31.05	0.89	20.47	0.34	0.47	Nil	3.0
Nickel	--	--	--	--	BDL	--	5.0
Zinc	--	--	--	--	BDL	--	15.0
Mercury	--	--	--	--	Nil	--	0.01
Lead	--	--	--	--	Nil	--	1.0
Arsenic	--	--	--	--	Nil	--	0.2
Cadmium	--	--	--	--	Nil	--	2.0
Insecticide/ Pesticide	--	--	--	--	--	--	Absent
Selenium	--	--	--	--	Nil	--	0.05
Total Hardness	--	--	--	--	--	648	--
Ca as CaCO ₃	--	--	--	--	--	542	--
Mg as CaCO ₃	--	--	--	--	--	106	--

Sample No.	Details	Sample No.	Details
1.	Raw Effluent Tank - I	4.	Treated Effluent Tank - II
2.	Treated Effluent Tank - I	5.	Final Outlet
3.	Raw Effluent Tank - II	6.	SLF Bore water

Note: All the parameters are in mg/liter except pH. BDL: Below Detectable Limit

Bio-Assay Test: Bio-Assay test was carried out for aquatic life in different concentrations of Final Treated Effluent.

Results: 100 % survival of fish in 100 % effluent concentration for 96 hours.

Hindalco Industries Limited

Unit: Birla Copper, Dahej

Raw water analysis report**Dated 30-11-2021**

Sr. No.	Parameters	UOM	Analysis report
1	Silica SiO ₂	ppm	10.5
2	R-CO ₂	ppm	ND
3	Sodium (Na)	ppm	20.3
4	pH		8.30
5	Turbidity	NTU	5.7
6	Conductivity	uS/cm	291
7	Total Hardness	ppm	130
8	Ca Hardness	ppm	68
9	Mg Hardness	ppm	62
10	Total Alkalinity	ppm	140
11	Chloride	ppm	20
12	Sulphate	ppm	36
13	Iron	ppm	0.1
14	Total Dissolved Solid	ppm	191

Party Name : HINDALCO INDUSTRIES LTD.
Address : (UNIT BIRLA COPPER)PLOT
NO.2,GIDC,DAHEJ,DIST.BHARU

Plot No. 2
Quantity as per GPCB Consent : 34095(KLPD)
Connection given Qty(per day): 34095(KLPD)

Bill No : 111883 **Size(M.M) :** 600 MM **Bill Date :** 12/11/2021 **Category :** INDUSTRIAL
Bill Month : 10-2021 **Connection No:** 2002 **Last Date :** 27/11/2021 **Meter Status:** NORMAL

 **Water Bill**

This Month's Charges:-

Current Reading	:	633987
Previous Reading	:	447220
Consumption	:	186767
Rate/1000 Ltr.	:	43.51
Normal Water Usages Charge:	:	8,126,232.17
Excess Water Usages Charge:	:	0.00
Penalty	:	0.00
Adjustment	:	0.00

This Month's Charges : 8,126,232.00

Your Account Details:-

Outstanding	:	0.00
Interest Rs	:	0.00
Penal Interest Rs	:	0.00
Waiver Interest Rs	:	0.00
Waiver Penal Int.Rs	:	0.00
This Month Charges	:	8,126,232.00
Gross Amount	:	8,126,232.00
Net Amount(Before Last Date)	:	8,126,232.00

Amount Payable After Last Date

Interst Rs.	:	71,104.53
Penal Interest Rs.	:	0.00
Waiver Interst Rs.	:	0.00
Waiver Penal Int.Rs.:	:	0.00
Gross Amount	:	8,197,336.53
Net Amount(After Last date)	:	8,197,337.00

 **Drainage Bill**

This Month's Charges:-

Consumption	:	
Rate/1000 Ltr.	:	
Drainage Charge	:	0.00
Penalty	:	0.00
Adjustment	:	0.00

This Month's Charges : 0.00

Your Account Details:

Outstanding	:	0.00
Interest Rs	:	0.00
Penal Interest Rs	:	0.00
Waiver Interest Rs	:	0.00
Waiver Penal Int.Rs	:	0.00
This Month Charges	:	0.00
Gross Amount	:	0.00
Net Amount(Before Last Date)	:	0.00

Amount Payable After Last Date

Interst Rs.	:	0.00
Penal Interest Rs.	:	0.00
Waiver Interst Rs.	:	0.00
Waiver Penal Int.Rs.:	:	0.00
Gross Amount	:	0.00
Net Amount(After Last date)	:	0.00

Your Bill Summary :-

O/S Amount	Interest	Penal Interest	This Month Charges
0.00	0.00	0.00	8,126,232.00

Payable Before 27-11-21
8,126,232.00

Payable After 27-11-21
8,197,337.00

Your Last Bill Pay Summary :-

Last Bill pay Amount Rs. 8141417

Last Bill pay Date : 27-10-2021

Dy. EX. Engineer
G.I.D.C, Bharuch

Payment detail

Payment Mode	Amount	Paid Date	Cheque/D.D No	Cheque/D.D Date	Bank	Branch
Cheque/D.D./Cash						

Bank Copy

Party Name : HINDALCO INDUSTRIES LTD.
Property : 2
BillNo : 111883 Bill Dt : 12/11/2021
Connection No : 2002
Payable Before 27-11-21 : 8,126,232.00
Payable After 27-11-21 : 8,197,337.00
Payment Mode: Cheque/D.D/Cash
Amount :
In Words Rs.
Receipt Date:
Chq/D.D No: chq/D.D Dt:
Bank :
Branch :
Contact No :

GIDC Copy

Party Name : HINDALCO INDUSTRIES LTD.
Property : 2
BillNo : 111883 Bill Dt : 12/11/2021
Connection No : 2002
Payable Before 27-11-21 : 8,126,232.00
Payable After 27-11-21 : 8,197,337.00
Payment Mode: Cheque/D.D/Cash
Amount :
In Words Rs.
Receipt Date:
Chq/D.D No: chq/D.D Dt:
Bank :
Branch :
Contact No :

Note:- Subject to Verify

1) The Notification No.2/2017 - central Tax (Rate) dated 28-06-2017 exempts water from GST under heading/ sub-heading/ tariff item No.2201

2) As per circular No.GIDC/O&M/CIR/ACC/REC/14 Dated 29/04/2019 only online payments through our website will be accepted. So please pay online through our website:www.gidc.gujarat.gov.in ->Online Payment of dues->User Registration for GG->Water/Drainage Payment->Region->Estate->Water Charges/Drainage Charges->Party Name/Plot No->Click to pay

Party Name : HINDALCO INDUSTRIES LTD.
Address : (UNIT BIRLA COPPER)PLOT
NO.2,GIDC,DAHEJ,DIST.BHARU

Plot No. 2
Quantity as per GPCB Consent : 50006(KLPD)
Connection given Qty(per day): 50006(KLPD)

Bill No : 111882 **Size(M.M) : 600 MM** **Bill Date : 12/11/2021** **Category : INDUSTRIAL**
Bill Month : 10-2021 **Connection No: 2** **Last Date : 27/11/2021** **Meter Status: NORMAL**

 **Water Bill**

This Month's Charges:-

Current Reading	:	4329891
Previous Reading	:	3940286
Consumption	:	389605
Rate/1000 Ltr.	:	43.51
Normal Water Usages Charge:		16,951,713.55
Excess Water Usages Charge:		0.00
Penalty	:	0.00
Adjustment	:	0.00

This Month's Charges : 16,951,714.00

Your Account Details:-

Outstanding	:	0.00
Interest Rs	:	0.00
Penal Interest Rs	:	0.00
Waiver Interest Rs	:	0.00
Waiver Penal Int.Rs	:	0.00
This Month Charges	:	16,951,714.00
Gross Amount	:	16,951,714.00
Net Amount(Before Last Date)		16,951,714.00

Amount Payable After Last Date

Interst Rs.	:	148,327.50
Penal Interest Rs.	:	0.00
Waiver Interst Rs.	:	0.00
Waiver Penal Int.Rs.:		0.00
Gross Amount	:	17,100,041.50
Net Amount(After Last date)		17,100,042.00

 **Drainage Bill**

This Month's Charges:-

Consumption	:	
Rate/1000 Ltr.	:	
Drainage Charge	:	0.00
Penalty	:	0.00
Adjustment	:	0.00

This Month's Charges : 0.00

Your Account Details:

Outstanding	:	0.00
Interest Rs	:	0.00
Penal Interest Rs	:	0.00
Waiver Interest Rs	:	0.00
Waiver Penal Int.Rs	:	0.00
This Month Charges	:	0.00
Gross Amount	:	0.00
Net Amount(Before Last Date)		0.00

Amount Payable After Last Date

Interst Rs.	:	0.00
Penal Interest Rs.	:	0.00
Waiver Interst Rs.	:	0.00
Waiver Penal Int.Rs.:		0.00
Gross Amount	:	0.00
Net Amount(After Last date)		0.00

Your Bill Summary :-

O/S Amount	Interest	Penal Interest	This Month Charges
0.00	0.00	0.00	16,951,714.00

Payable Before 27-11-21
16,951,714.00
Payable After 27-11-21
17,100,042.00

Your Last Bill Pay Summary :-

Last Bill pay Amount Rs. 14626235

Last Bill pay Date : 27-10-2021

Dy. EX. Engineer
G.I.D.C, Bharuch

Payment detail

Payment Mode	Amount	Paid Date	Cheque/D.D No	Cheque/D.D Date	Bank	Branch
Cheque/D.D./Cash						

Bank Copy

Party Name : HINDALCO INDUSTRIES LTD.
Property : 2
BillNo : 111882 Bill Dt : 12/11/2021
Connection No : 2
Payable Before 27-11-21 : 16,951,714.00
Payable After 27-11-21 : 17,100,042.00
Payment Mode: Cheque/D.D/Cash
Amount :
In Words Rs.
Receipt Date:
Chq/D.D No: chq/D.D Dt:
Bank :
Branch :
Contact No :

GIDC Copy

Party Name : HINDALCO INDUSTRIES LTD.
Property : 2
BillNo : 111882 Bill Dt : 12/11/2021
Connection No : 2
Payable Before 27-11-21 : 16,951,714.00
Payable After 27-11-21 : 17,100,042.00
Payment Mode: Cheque/D.D/Cash
Amount :
In Words Rs.
Receipt Date:
Chq/D.D No: chq/D.D Dt:
Bank :
Branch :
Contact No :

Note:- Subject to Verify

- The Notification No.2/2017 - central Tax (Rate) dated 28-06-2017 exempts water from GST under heading/ sub-heading/ tariff item No.2201
- As per circular No.GIDC/O&M/CIR/ACC/REC/14 Dated 29/04/2019 only online payments through our website will be accepted. So please pay online through our website:www.gidc.gujarat.gov.in ->Online Payment of dues->User Registration for GG->Water/Drainage Payment->Region->Estate->Water Charges/Drainage Charges->Party Name/Plot No->Click to pay

Hindalco Industries Limited Unit : Birla Copper, Dahej				
Generation and Disposal of Hazardous Waste				
June-21 to Nov-21				
Sr. No.	Name of Haz. Waste	Quantity Generated	Quantity Disposed	Facility
1	ETP waste sludge & Scrubber waste (Sludge & Filter cakes)	49772.85 MT	49772.85 MT	Disposed to Captive SLF
2	Arsenic bearing sludge, As-Cu precipitate	35.018 MT	35.018 MT	Recycled in Plant
3	Used oil	27.02 MT	27.02 MT	Disposed to Registered Recycler (M/s Shana Oil Process)
4	Spent Electrolyte solution	17563 KL	17563 KL	Treated in our own Effluent Treatment Plant
5	Residue dust from SAP	0	0	Recycled in plant
6	Spent Catalyst	0	0	Disposal to Captive SLF
7	Used Empty Drums (Empty barrels/ Containers/ liners contaminated with hazardous chemicals /wastes)	0.654 MT	0.654 MT	Disposed to Registered Recycler (M/s Alfesani Greentech)
8	Flue gas cleaning residue (Exhaust air /gas cleaning residue)	294	294	Recycled in Plant
9	Spent resin from DM plant (Spent ion exchange resin containing toxic metals)	0	0	Disposal to Captive SLF
10	Selenium & selenium compounds.	0	0	Recycled in Plant
11	Silver compounds.	0	0	Recycled in Plant
12	Inorganic Acid (Spent Acids)	0	0	Plant Generation stopped.
13	Dust & Lumpy	5718.28 MT	7530 MT	Recycled in plant and export to authorised agency
14	Copper Converting or C-Slag	113 MT	249 MT	Recycled in plant
15	Liberator cake	1410 MT	1250 MT	Recycled in plant
16	Copper Revert	29760 MT	15044 MT	Recycled in plant
17	Dore Slag (Slags from copper processing for further processing or refining)	953.22 MT	953 MT	Recycled in plant and export to authorised agency
18	Lead Anode/ Cathode	53.21 MT	53.21 MT	Disposed to Registered Recycler (M/s Gravita India)
19	Cotton waste used (Contaminated cotton rags or other cleaning materials)	0	0	Collection, Storage, Transportation and Disposal to CHWIF.
20	Used Insulation	97.53 MT	97.53 MT	Disposed to Registered Recycler (M/s BEIL)
21	Discarded PPE (Rubber)	0	0	Disposal to Captive SLF
22	Used membrane/ Filter cloth and bags	14 MT	14 MT	Disposal to Captive SLF

Hindalco Industries LTD.

Unit: Birla Copper, Dahej

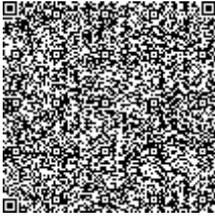
Fly Ash Generation Reduction Plan

Birla Copper having 100 MW cogeneration power plant with 3 Nos CFBC boilers, capacity 150 TPH each. Coal consumption is approx. 1100 MT/ day and ash generation approx. 250 MT/day.

Current coal consumption is approx. 900 MT/day by reducing power generation and ash generation approx. 200 MT/day.

In future, ash generation will be reduced by –

1. Less power generation,
 - A. Renewable source of power – entering a contract for 20 mw hybrid power, hybrid plant will start by March 24
 - B. Energy savings – taking different steps to reduce auxiliary power consumption like installation of VFD.
2. Using a coal with very less ash percentage to reduce overall generation of ash.

ADITYA BIRLA HINDALCO		HINDALCO INDUSTRIES LIMITED (Unit – BIRLA COPPER) P.O. DAHEJ, LAKHIGAM, BHARUCH 392130 Gujarat Tel:(02641) 256004-5-6 GSTIN: 24AAACH1201R1ZT State Code: 24 PAN: AAACH1201R		TAX INVOICE (Issued under Section 31 of the Central Goods & Service Tax Act, 2017) (An ISO 9001 & 14001 Company) Range : IV Division : VII (Bharuch) Commissionerate : VADODARA-II		ORIGINAL FOR RECIPIENT	
Details of Receiver (Billed To) 7471 - S.K. ENTERPRISE RUSHIRUKSH COMPLEX IPCL CHOKDI, DIST. BHARUCH, DAHEJ, GUJARAT - 392011, INDIA GSTIN: 24AQHPB2301C1ZW State Code: 24 PAN: AQHPB2301C		TAX IS PAYABLE ON REVERSE CHARGE: NO Place of Supply : GUJARAT [24]		Invoice Number: AW/22006818 Invoice Date: 01-JUN-21 Invoice Issue Date: 01-Jun-2021 12:57 Goods Removal Date: 01-Jun-2021 Delivery Order No.: BDNASH/22081000030 Delivery Order Date: 26-MAY-21			
Details of Delivery 7472 - S.K. ENTERPRISE RUSHIRUKSH COMPLEX IPCL CHOKDI, DIST. BHARUCH, DAHEJ, GUJARAT - 392011, INDIA GSTIN: 24AQHPB2301C1ZW		Mode of Transport: ROAD Carrier Name: S.K.TRANSPORT LR/RR No.: 658 LR/RR Date: 01-JUN-21		PO Date : 26-MAY-21 PO Number : 1 Vehicle No. : GJ10X7618			
Description of Goods / Service	HSN CODE	Identification Number	Unit	Quantity	Rate Per Unit ₹	Value ₹	
FLY ASH	2621 90 00		MT	26.66	100	2666	
Delivery ID : 1503216				Total	26.66	2666	
					CGST @ 2.5%	67	
					SGST @ 2.5%	67	
					TCS @ 0.1%	3	
					Grand Total	2802	
Total Invoice Value (In Figure): ₹ 2802 /-							
Total Invoice Value (In Word): RUPEES TWO THOUSAND EIGHT HUNDRED TWO ONLY							
L/C Ref :							
Party Banker:							
Container No. :				Bottle Seal No.			
BC Seal:				Central Tax Seal:			
IRN – 2c7bc5a027ad13badf3b9db5de75891fc345fd153bdcc4ab50ff6e43392009f0							
CERTIFIED THAT THE PARTICULARS GIVEN ABOVE ARE TRUE AND CORRECT AND THE AMOUNT INDICATED REPRESENTS THE PRICE ACTUALLY CHARGED BY US AND THERE IS NO FLOW OF ADDITIONAL CONSIDERATION DIRECTLY OR INDIRECTLY FROM THE BUYER. Our Delivery Challan/Invoice weight is final. Weight difference up to +/- 0.2% will not be accepted under standard weight tolerance norms. Terms & Condition of Sale : 1) Business transaction Subject to the Jurisdiction of Mumbai Court.		Material received in Good condition & as per weight mentioned above. (Signature of Buyer) For HINDALCO INDUSTRIES LIMITED (UNIT : BIRLA COPPER) (Authorized Signatory)					
Registered Office: HINDALCO INDUSTRIES LIMITED, Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road, Andheri (East), MUMBAI, MAHARASTRA, 400093, Tel:(91-22)66917000, Fax:(91-22)66917001 Corporate Identity Number: L27020MH1958PLC011238 E-Mail ID: hindalco@adityabirla.com Website: www.hindalco.com							

 HINDALCO INDUSTRIES LIMITED (Unit – BIRLA COPPER) P.O. DAHEJ, LAKHIGAM, BHARUCH 392130 Gujarat Tel:(02641) 256004-5-6 GSTIN: 24AAACH1201R1ZT State Code: 24 PAN: AAACH1201R	TAX INVOICE (Issued under Section 31 of the Central Goods & Service Tax Act, 2017) (An ISO 9001 & 14001 Company)	DUPLICATE FOR TRANSPORTER
	Range : IV Division : VII (Bharuch) Commissionerate : VADODARA-II	Invoice Number: AW/22006818 Invoice Date: 01-JUN-21 Invoice Issue Date: 01-Jun-2021 12:57 Goods Removal Date: 01-Jun-2021 Delivery Order No.: BDNASH/22081000030 Delivery Order Date: 26-MAY-21
Details of Receiver (Billed To) 7471 - S.K. ENTERPRISE RUSHIRUKSH COMPLEX IPCL CHOKDI, DIST. BHARUCH, DAHEJ, GUJARAT - 392011, INDIA GSTIN: 24AQHPB2301C1ZW State Code: 24 PAN: AQHPB2301C	TAX IS PAYABLE ON REVERSE CHARGE: NO Place of Supply : GUJARAT [24]	Details of Delivery 7472 - S.K. ENTERPRISE RUSHIRUKSH COMPLEX IPCL CHOKDI, DIST. BHARUCH, DAHEJ, GUJARAT - 392011, INDIA GSTIN: 24AQHPB2301C1ZW
Mode of Transport: ROAD	PO Date : 26-MAY-21	PO Number : 1
Carrier Name: S.K.TRANSPORT		
LR/RR No.: 658	LR/RR Date: 01-JUN-21	Vehicle No. : GJ10X7618

Description of Goods / Service	HSN CODE	Identification Number	Unit	Quantity	Rate Per Unit	Value
FLY ASH	2621 90 00		MT	26.66	100	2666
Delivery ID : 1503216				Total		2666

CGST @ 2.5%	67
SGST @ 2.5%	67
TCS @ 0.1%	3

Grand Total	2802
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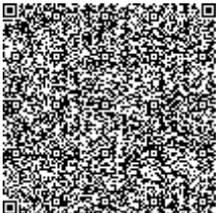
Total Invoice Value (In Figure): ₹ 2802/- Total Invoice Value (In Word): RUPEES TWO THOUSAND EIGHT HUNDRED TWO ONLY
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L/C Ref :

Party Banker:

Container No. :	Bottle Seal No.
BC Seal:	Central Tax Seal:

IRN – 2c7bc5a027ad13badf3b9db5de75891fc345fd153bdcc4ab50ff6e43392009f0

CERTIFIED THAT THE PARTICULARS GIVEN ABOVE ARE TRUE AND CORRECT AND THE AMOUNT INDICATED REPRESENTS THE PRICE ACTUALLY CHARGED BY US AND THERE IS NO FLOW OF ADDITIONAL CONSIDERATION DIRECTLY OR INDIRECTLY FROM THE BUYER. Our Delivery Challan/Invoice weight is final. Weight difference up to +/- 0.2% will not be accepted under standard weight tolerance norms. Terms & Condition of Sale : 1) Business transaction Subject to the Jurisdiction of Mumbai Court.	Material received in Good condition & as per weight mentioned above. (Signature of Buyer) For HINDALCO INDUSTRIES LIMITED (UNIT : BIRLA COPPER) (Authorized Signatory)	
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Registered Office: HINDALCO INDUSTRIES LIMITED, Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road, Andheri (East), MUMBAI, MAHARASTRA, 400093, Tel:(91-22)66917000, Fax:(91-22)66917001 Corporate Identity Number: L27020MH1958PLC011238 E-Mail ID: hindalco@adityabirla.com Website: www.hindalco.com
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 HINDALCO INDUSTRIES LIMITED (Unit – BIRLA COPPER) P.O. DAHEJ, LAKHIGAM, BHARUCH 392130 Gujarat Tel:(02641) 256004-5-6 GSTIN: 24AAACH1201R1ZT State Code: 24 PAN: AAACH1201R	TAX INVOICE (Issued under Section 31 of the Central Goods & Service Tax Act, 2017) (An ISO 9001 & 14001 Company)	TRIPLICATE FOR SUPPLIER
	Range : IV Division : VII (Bharuch) Commissionerate : VADODARA-II	Invoice Number: AW/22006818 Invoice Date: 01-JUN-21 Invoice Issue Date: 01-Jun-2021 12:57 Goods Removal Date: 01-Jun-2021 Delivery Order No.: BDNASH/22081000030 Delivery Order Date: 26-MAY-21
Details of Receiver (Billed To) 7471 - S.K. ENTERPRISE RUSHIRUKSH COMPLEX IPCL CHOKDI, DIST. BHARUCH, DAHEJ, GUJARAT - 392011, INDIA GSTIN: 24AQHPB2301C1ZW State Code: 24 PAN: AQHPB2301C	TAX IS PAYABLE ON REVERSE CHARGE: NO Place of Supply : GUJARAT [24]	Details of Delivery 7472 - S.K. ENTERPRISE RUSHIRUKSH COMPLEX IPCL CHOKDI, DIST. BHARUCH, DAHEJ, GUJARAT - 392011, INDIA GSTIN: 24AQHPB2301C1ZW
Mode of Transport: ROAD	PO Date : 26-MAY-21	PO Number : 1
Carrier Name: S.K.TRANSPORT		
LR/RR No.: 658	LR/RR Date: 01-JUN-21	Vehicle No. : GJ10X7618

Description of Goods / Service	HSN CODE	Identification Number	Unit	Quantity	Rate Per Unit	Value
FLY ASH	2621 90 00		MT	26.66	100	2666
Delivery ID : 1503216				Total	26.66	2666

CGST @ 2.5%	67
SGST @ 2.5%	67
TCS @ 0.1%	3

Grand Total	2802
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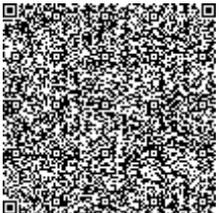
Total Invoice Value (In Figure): ₹ 2802/- Total Invoice Value (In Word): RUPEES TWO THOUSAND EIGHT HUNDRED TWO ONLY
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L/C Ref :

Party Banker:

Container No. :	Bottle Seal No.
BC Seal:	Central Tax Seal:

IRN – 2c7bc5a027ad13badf3b9db5de75891fc345fd153bdcc4ab50ff6e43392009f0

CERTIFIED THAT THE PARTICULARS GIVEN ABOVE ARE TRUE AND CORRECT AND THE AMOUNT INDICATED REPRESENTS THE PRICE ACTUALLY CHARGED BY US AND THERE IS NO FLOW OF ADDITIONAL CONSIDERATION DIRECTLY OR INDIRECTLY FROM THE BUYER. Our Delivery Challan/Invoice weight is final. Weight difference up to +/- 0.2% will not be accepted under standard weight tolerance norms. Terms & Condition of Sale : 1) Business transaction Subject to the Jurisdiction of Mumbai Court.	Material received in Good condition & as per weight mentioned above. (Signature of Buyer) For HINDALCO INDUSTRIES LIMITED (UNIT : BIRLA COPPER) (Authorized Signatory)	
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Registered Office: HINDALCO INDUSTRIES LIMITED, Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road, Andheri (East), MUMBAI, MAHARASTRA, 400093, Tel:(91-22)66917000, Fax:(91-22)66917001 Corporate Identity Number: L27020MH1958PLC011238 E-Mail ID: hindalco@adityabirla.com Website: www.hindalco.com
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 HINDALCO INDUSTRIES LIMITED (Unit – BIRLA COPPER) P.O. DAHEJ, LAKHIGAM, BHARUCH 392130 Gujarat Tel:(02641) 256004-5-6 GSTIN: 24AAACH1201R1ZT State Code: 24 PAN: AAACH1201R	TAX INVOICE (Issued under Section 31 of the Central Goods & Service Tax Act, 2017) (An ISO 9001 & 14001 Company)	NOT FOR INPUT TAX CREDIT
	Range : IV Division : VII (Bharuch) Commissionerate : VADODARA-II	Invoice Number: AW/22006818 Invoice Date: 01-JUN-21 Invoice Issue Date: 01-Jun-2021 12:57 Goods Removal Date: 01-Jun-2021 Delivery Order No.: BDNASH/22081000030 Delivery Order Date: 26-MAY-21
Details of Receiver (Billed To) 7471 - S.K. ENTERPRISE RUSHIRUKSH COMPLEX IPCL CHOKDI, DIST. BHARUCH, DAHEJ, GUJARAT - 392011, INDIA GSTIN: 24AQHPB2301C1ZW State Code: 24 PAN: AQHPB2301C	TAX IS PAYABLE ON REVERSE CHARGE: NO Place of Supply : GUJARAT [24]	Details of Delivery 7472 - S.K. ENTERPRISE RUSHIRUKSH COMPLEX IPCL CHOKDI, DIST. BHARUCH, DAHEJ, GUJARAT - 392011, INDIA GSTIN: 24AQHPB2301C1ZW
Mode of Transport: ROAD	PO Date : 26-MAY-21	PO Number : 1
Carrier Name: S.K.TRANSPORT		
LR/RR No.: 658	LR/RR Date: 01-JUN-21	Vehicle No. : GJ10X7618

Description of Goods / Service	HSN CODE	Identification Number	Unit	Quantity	Rate Per Unit	Value
FLY ASH	2621 90 00		MT	26.66	100	2666
Delivery ID : 1503216				Total	26.66	2666

CGST @ 2.5%	67
SGST @ 2.5%	67
TCS @ 0.1%	3

Grand Total	2802
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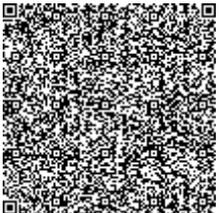
Total Invoice Value (In Figure): ₹ 2802 /- Total Invoice Value (In Word): RUPEES TWO THOUSAND EIGHT HUNDRED TWO ONLY

L/C Ref :

Party Banker:

Container No. :	Bottle Seal No.
BC Seal:	Central Tax Seal:

IRN – 2c7bc5a027ad13badf3b9db5de75891fc345fd153bdcc4ab50ff6e43392009f0

<p>CERTIFIED THAT THE PARTICULARS GIVEN ABOVE ARE TRUE AND CORRECT AND THE AMOUNT INDICATED REPRESENTS THE PRICE ACTUALLY CHARGED BY US AND THERE IS NO FLOW OF ADDITIONAL CONSIDERATION DIRECTLY OR INDIRECTLY FROM THE BUYER.</p> <p>Our Delivery Challan/Invoice weight is final. Weight difference up to +/- 0.2% will not be accepted under standard weight tolerance norms.</p> <p>Terms & Condition of Sale : 1) Business transaction Subject to the Jurisdiction of Mumbai Court.</p>	<p>Material received in Good condition & as per weight mentioned above.</p> <p style="text-align: center;">(Signature of Buyer)</p> <p style="text-align: center;">For HINDALCO INDUSTRIES LIMITED (UNIT : BIRLA COPPER)</p> <p style="text-align: center;">(Authorized Signatory)</p>	
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Registered Office: HINDALCO INDUSTRIES LIMITED, Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road, Andheri (East), MUMBAI, MAHARASTRA, 400093, Tel:(91-22)66917000, Fax:(91-22)66917001 Corporate Identity Number: L27020MH1958PLC011238 E-Mail ID: hindalco@adityabirla.com Website: www.hindalco.com
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LIST OF UNITS

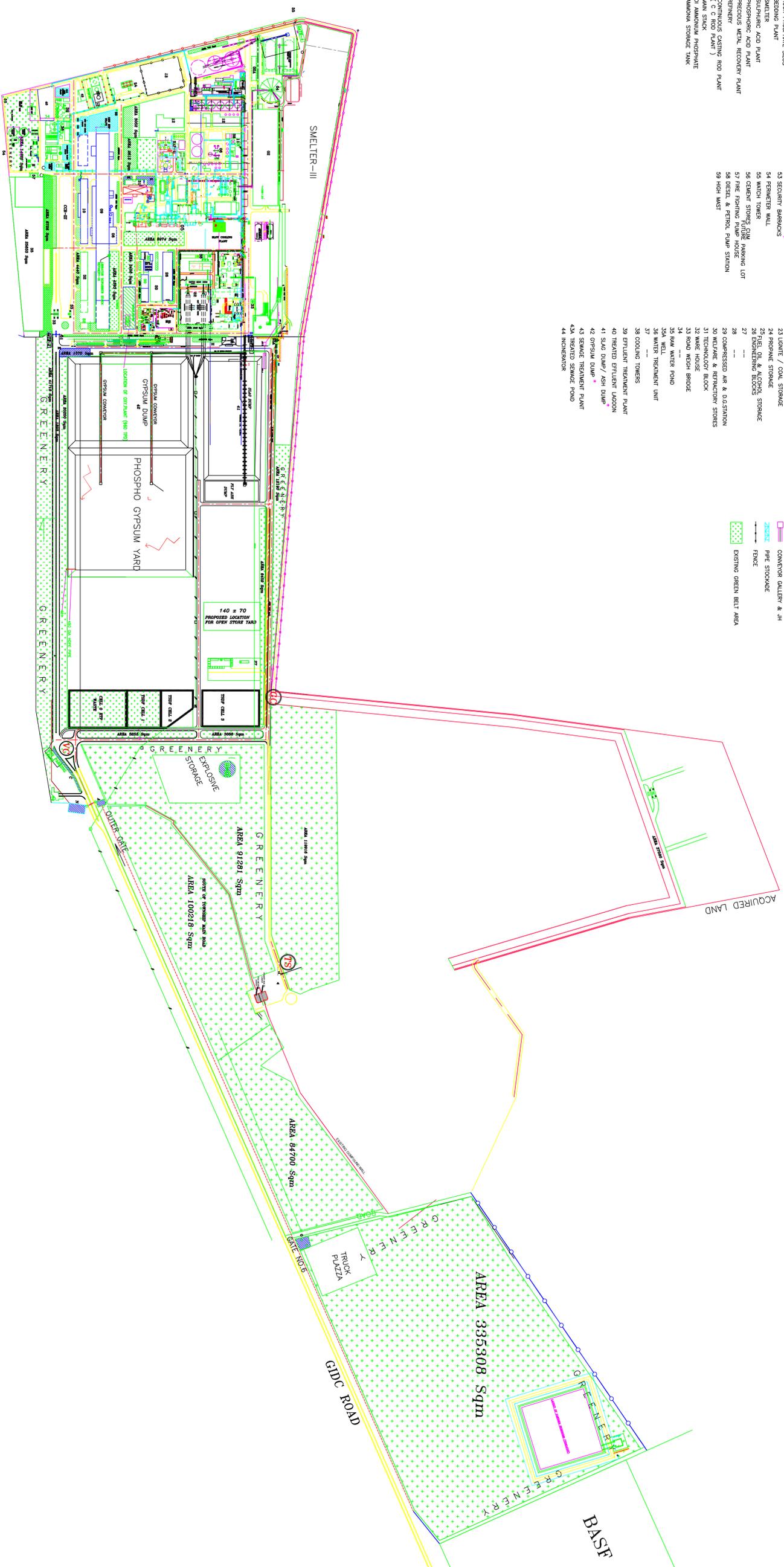
- TECHNOLOGICAL UNITS**
- 01 CONVEYOR FROM LIFT
 - 02 COPPER CONCENTRATE & FLUX STORAGE
 - 03A SILICA STORAGE
 - 03B ROCK PHOSPHATE SILOS
 - 04 RECYCLING PLANT
 - 04 SMELTER
 - 06 SULPHURIC ACID PLANT
 - 07 PHOSPHORIC ACID PLANT
 - 08 PHOSPHORIC ACID PLANT
 - 09 REFINERY
 - 10 CONTINUOUS CASTING ROD PLANT
 - 11 MAIN STOCK
 - 12 DI AMMONIUM PHOSPHATE
 - 13 AMMONIUM STORAGE TANK

- NON PLANT UNITS**
- 50 ADMINISTRATIVE BUILDING
 - 51 GATE / SECURITY BOOTH
 - 52 FINE STATION
 - 53 SECURITY BARRACKS
 - 54 REFINERY WALL
 - 56 WATCH TOWER
 - 56 CEMENT STORAGE
 - 57 FINE PRINTING PUMP HOUSE
 - 58 DIESEL & PETROL PUMP STATION
 - 59 HIGH MAST

- AUXILIARY UNITS**
- 20 OXIDIZER PLANT
 - 21 POWER PLANT
 - 22 MAIN RECEIVING STATION
 - 23 LIGNITE / COAL STORAGE
 - 24 PROMEX STORAGE
 - 26 FUEL OIL STORAGE
 - 26 DIESEL OIL STORAGE
 - 27 ---
 - 28 ---
 - 29 COMPRESSED AIR & O₂ STATION
 - 30 WELDER & REFRIGERATOR STORES
 - 31 TECHNOLOGY BLOCK
 - 32 WARE HOUSE
 - 33 ROAD WEIGH BRIDGE
 - 34 ---
 - 35 RAW WATER POND
 - 35A WELL
 - 37 WATER TREATMENT UNIT
 - 38 COOLING TOWERS
 - 39 EFFLUENT TREATMENT PLANT
 - 40 TREATED EFFLUENT LAGOON
 - 41 SLAG DUMP / ASH DUMP
 - 42 GYPSUM DUMP
 - 43 SEWAGE TREATMENT PLANT
 - 43A TREATED SEWAGE POND
 - 44 INCINERATOR

SYMBOL LEGEND

	EXISTING GREEN BELT AREA
	FENCE
	PIPE STOCKPILE
	CONVEYOR QUARRY & JH
	ROAD
	UNIT/BUILDING



IMPORTANT

- 1 THIS REPORT SUBMITTED BY THE CONSULTANT IS VALID ONLY FOR THE PROJECT AND SITE SPECIFIC TO THE PROJECT AND SHALL BE USED FOR THE PURPOSES ONLY.
- 2 THIS REPORT SHALL BE USED FOR THE PURPOSES ONLY.
- 3 THE DRAWING SHALL BE USED FOR THE PURPOSES ONLY.

4. ALL DIMENSIONS TO FIT OF UNITS/ BUILDING SHALL BE EQUAL TO 1:50. ALL DIMENSIONS TO FIT OF UNITS/ BUILDING SHALL BE EQUAL TO 1:50. ALL DIMENSIONS TO FIT OF UNITS/ BUILDING SHALL BE EQUAL TO 1:50. ALL DIMENSIONS TO FIT OF UNITS/ BUILDING SHALL BE EQUAL TO 1:50.

HINDALCO HINDALCO INDUSTRIES LIMITED
UNIT - BIRLA COPPER
 P.O.:DAHELI, DIST: BHARUCH-392130

AS ON: 2017-2018

TITLE : GENERAL LAYOUT OF GREEN BELT AREA

BY	NAME	SIGN	DATE	PROJ. NO.	SCALE
APPRO	DINESH B.				
DRAWN	M. K. P.		02.07.18	DWG. NO.	
SHEET					

Hindalco Industries LTD.
Unit: Birla Copper, Dahej

Corporate Social Responsibility (CSR)

Hindalco Industries Limited, Unit: Birla Copper is committed to support the community in and around the plant and has been doing so since its inception. We have provided employment to more than 385 residents of Lakhigam & Dahej are on-roll employees as well as engaged them through contractors.

Hindalco Industries Limited, Unit: Birla Copper always believed in the community development and invested a sizeable amount in Lakhigam & Dahej through our various CSR activities with the help of our dedicated team working closely with the residents for the benefit of all. Some of the notable initiatives implemented are mentioned below.

1. Under Infrastructure Initiatives company has constructed 123 houses for BPL families at Dahej & Lakhigam villages, community hall at Lakhigam, computer training centre for the students of primary school at Dahej,
2. Under health infrastructure constructed 241 toilet blocks at Dahej & Lakhigam Company constructed drainage system at Lakhigam village. The Company provides ambulance service 24*7 & emergency medical services for the villagers. Company also provides drinking water facilities through pipeline for the villagers of Lakhigam.
3. Under health initiative company has organized primary health check-up camps on every 15 days at Lakhigam and Dahej & multi-speciality health check-up camps every year. Eye screening & Cataract operation camps organized for the people of both villages every year.
4. During COVID company in these villages under which 21 rounds of sanitization rounds completed, DDT powder sprayed and around 350 ration kits distributed, employment provided to the rural women of Dahej for stitching around 19000 masks & for making 25,000 remedial bags to fight against COVID. More than 9,000 masks & 18,000 remedial bags distributed in the both the villages.
5. Under Education initiative company provides education materials support to the 3,000 students of Lakhigam & Dahej. To promote digital literacy in the area company have started Tablab project targeting around 600 students of Government primary school of Lakhigam and Dahej.
6. Under Sustainable livelihood company has provided skill trainings on sewing to the 400 women and beauty parlour training to the 100 women of Lakhigam & Dahej. Around 06 Self Help Groups have been formed consisting of 72 women of Lakhigam and Dahej
7. Apart from these initiatives company supported these villages by providing food, plastic sheets during natural calamities like heavy rain, cyclone etc.
8. We ensured smooth supply of hundreds of tons of Medical Oxygen to Ahmedabad Municipality. For this contribution Birla Copper team and our Chairman received Letter of Appreciation from Government of Gujarat

All these activities are well appreciated by the communities and Gram panchayat of both the villages, appreciation letters are attached for your reference. There has been sizable increase in number of vehicle owners in Lakhigam & Dahej, increased number of contractors, domestic help and various other opportunities that has resulted in organic growth of the village. These initiatives have resulted in improving literacy rate, health and hygiene standards.

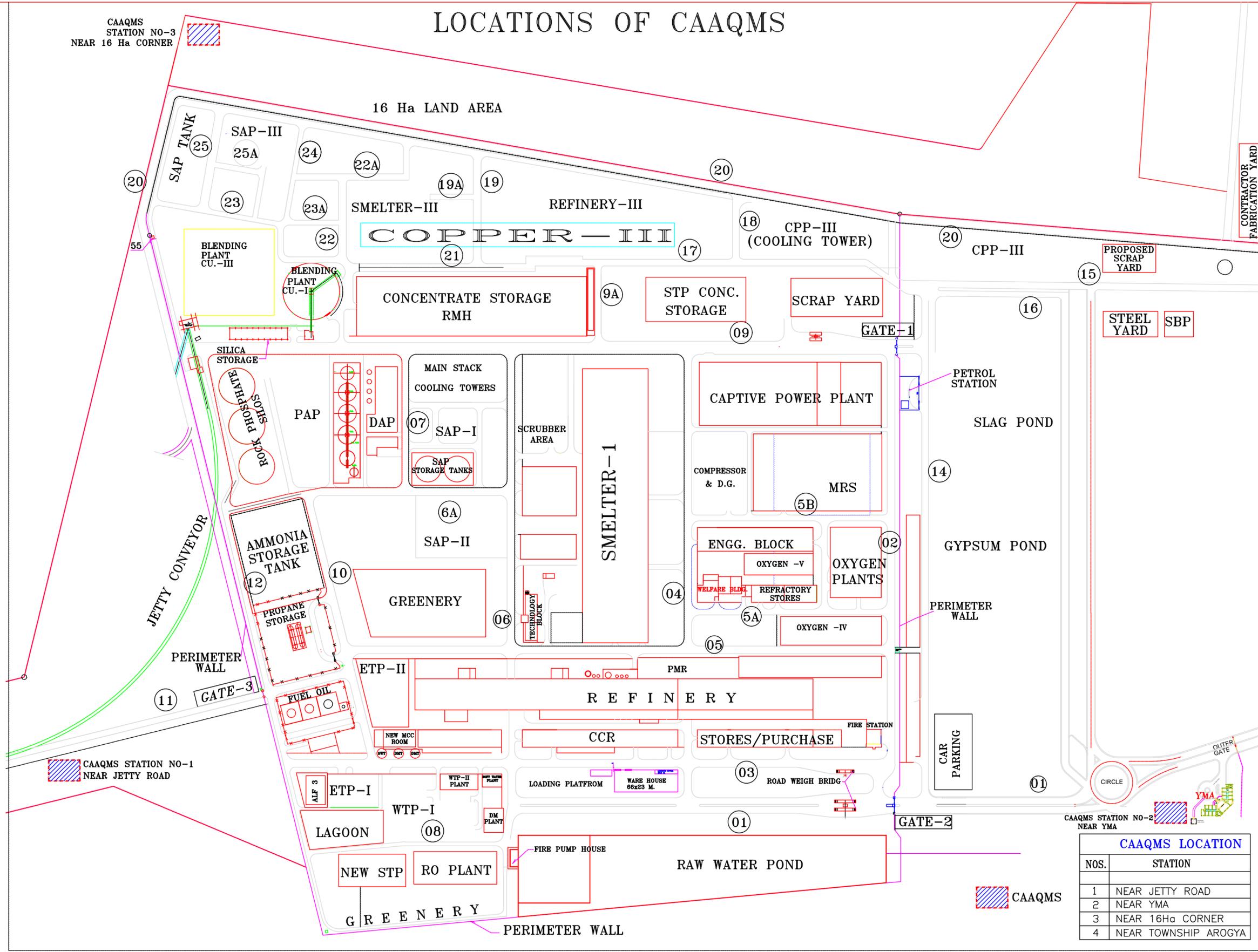
Aditya Birla Public School, Kesrol run by Copper Jan Seva Trust provides quality education, discipline culture, world class facilities, professional approach, effective management and positive result of the school in all board exam, our ABPS school considered one of the best English medium schools in the entire Bharuch district. Total 1486 Students are getting quality education from ABPS school, out of which 147 students are coming from nearby 25 villages.

The Year-wise Cost incurred on Corporate Social Responsibility (Last 4 Years) is as follows: -

S. No.	Year	Cost (in Lakhs)
1	2017-18	159.82
2.	2018-19	248.08
3.	2019-20	165.37
4.	2020-21	87.99

LOCATIONS OF CAAQMS

CAAQMS STATION NO-3
NEAR 16 Ha CORNER



CONTRACTOR FABRICATION YARD

TOWNSHIP AROGYA

CAAQMS STATION NO-4
NEAR AROGYA

CAAQMS LOCATION	
NOS.	STATION
1	NEAR JETTY ROAD
2	NEAR YMA
3	NEAR 16Ha CORNER
4	NEAR TOWNSHIP AROGYA

AS ON. 13/02/2020

01-ROAD NO. (1 TO 25 A)

HINDALCO INDUSTRIES LIMITED
UNIT-BIRLA COPPER
 P.O.:DAHEJ, DIST: BHARUCH,392130.

TITLE CAAQMS LAYOUT

BY	NAME	DATE	SCALE:
APPR	DR. SANJAY		
DRAWN	M K P	09-08-19	DRG.NO
SHEET	OF		HIL-BC-ENV-CAAQMS

Hindalco Industries LTD.

Unit: Birla Copper, Dahej

Dates of Six monthly reports submitted

Last Three years Six Monthly Compliance report		
Sr. No.	Six monthly Compliance report	Date of submission
1	Oct-18-Mar-2019	17th June 2019
2	April-19-Sept-2019	17th Dec 2019
3	Oct-19-Mar-2020	25th June-2020
4	April-20-Sept-2020	18th Nov-2020
5	Oct-20-Mar-2021	15th June-2021
6	April-21-Sept-2021	21st Oct-2021

Hindalco Industries LTD.
Unit: Birla Copper, Dahej

Photograph of DG set

DG-1



DG-2



Hindalco Industries LTD.

Unit: Birla Copper, Dahej

Carbon Sequestration and Green House Gas Inventory

Birla Copper, Hindalco's copper unit, is located at Dahej in the Bharuch district of Gujarat. This is one of the largest single-location copper smelters in the world with integrated port facilities. Dahej Harbor and Infrastructure Limited (DHIL) is strategically located to cater to the logistics and transportation needs of its customers. The copper unit at Dahej comprises copper smelters, backed by a captive power plant, oxygen plants, by-products plants, utilities and a captive jetty. There is also a precious metals recovery plant at Dahej, which produces gold, silver and selenium.

The facility is spread across an area of 327 Ha out of which 117 Ha is Green belt which complies with the Government's 33% green belt requirement.

In order to study the Green House Gas (GHG) Inventory and Carbon Sequestration Potential M/s Confederation of Indian Industry (CII) was consulted. The following was the scope of work given to them:

1. Site Visit to facility for understanding organizational and operational boundaries, collection of activity data and a review of onsite plantation for carbon sequestration potential
2. Quantification of GHG and preparation of GHG inventory report.

Carbon Sequestration

Site Visit was carried out and out of 117 Ha area 55.75 Ha area was considered to have potential for carbon sequestration. The 55.75 Ha area and total 16,781 trees of 19 species were taken in inventory estimation. Following is the list of Trees whose characteristics were taken into consideration

S. No.	Species	Local Name
1	Aegle marmelose	Bel
2	Ailanthus excelsa	Bakram Neem
3	Azadirachta indica	Neem
4	Bombax ceiba	Kapok
5	Cassia festula	Amaltash
6	Casurinaequisetifolia	Saru
7	Delnoix regia	Gulmohar
8	Eucalyptus sp	Nilgiri
9	Ficus bengalensis	Bargad
10	Ficus elastica	Rubber Plant
11	Ficus religiosa	Peepal
12	Lagerstremia flosreginae	Siddha
13	Mangifera indica	Aam
14	Peltophorum ferruginum	Peltophorum
15	Pongamia pinnata	Karanj
16	Samanea saman	Rain tree
17	Syzygium cumini	Jamun

18	Terminalia Cattapa	Badam
19	Thespesia Poulnea	Paras Peepal

The following were the findings of M/s CII after the study of our green belt:

1. The Carbon sequestration potential of plant species in the green belt of studied area varies from 19.30 kg CO₂Yr⁻¹(Gulmohar) to 37.13 kg CO₂Yr⁻¹(Paras Peepal) with an average of 25.72 kg CO₂Yr⁻¹ among the total 19 species.
2. The total greenbelt may sequester 1067.8 tons CO₂Yr⁻¹.

Green House Gas Inventory

The CII team through site visit and data collection defined the operational boundary of the project area (Hindalco, Birla Copper) and categorized the emission into three categories:

1. Scope-1: Direct GHG emissions, which result directly from activities within the organization's control;
2. Scope-2: Indirect GHG emissions, which result from any electricity, heat or steam purchased by the organization
3. Scope-3: Other indirect emissions which results from transportation activities that are a consequence of the activities of the organization but occur from sources not owned or controlled by the organization.

On the basis of the study the following Green House Gas Intensity for all three scopes was estimated:

1. 10. 90 MT CO₂e/MT of Copper Cathode for the year 2018-19.

FORM No. 32 Health Register (Prescribed under Rule 68-T and 102)

1. Sr. No. Reg. of Adult workers :

2. Name of Worker :

3. Sex : M

4. Date of Birth 10/07/1991

Cont. No. 7698830696

5. Date of Join 24.03.2014

Rakesh Kumar

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Employment Grade	Nature of Process	Dangerous Process	Name of Job or Occupation	Name of Products or By products likely to be exposed to	Date of Posting	Date of leaving/ transfer to or transfer	Reasons for discharge/ leaving of transfer	Medical Examination Date	Signs and Symptoms noticed during examination	Nature of Injury	Reason for such injury	Period of Temporary withdrawal from the work	Date of discharge/ return to work	Date of re-employment/ return to work	Signature with date of the Medical Officer Certified Employee	
DAP	DAP Handling		Trainer DAP Tech	DAP THG	24.03.14			05/10/14	NIL	NIL	NAD					
DAP	DAP Handling			BOP MS04				Dec 15								
DAP	DAP Material Handling							20/11/14								
DAP	DAP Material Handling							08.08.18	NIL	NAD	fit					
DAP	DAP Material Handling							20.05.15	NIL	NIL	fit					
DAP	DAP Material Handling							30.10.20	NIL	NIL	fit					

30/12/2014 NAD fit
30/12/2014 NAD fit
30/12/2014 NAD fit
30/12/2014 NAD fit
30/12/2014 NAD fit

CJST/OHCH/T/F/04

FORM No. 32 Health Register (Prescribed under Rule 68-T and 102)

1. Sr.No.Reg.of Adult workers :

10821

2. Name Of Worker : Navin G. Paley

6. Cont.No - 735977933

3. Sex : M 4. Date Of Birth 10/5/1970 5. Date Of Join 25/2/2000

Department/ Works	Name Of Hazardous Processes	Dangerous Process	Nature of Job of Occupation	Raw Materials Products or by products likely to be exposed to	Date of Posting	Date of leaving/ transfer to or transfer	Reasons for discharge/ leaving or transfer	Medical examination and the results thereof				If declared unfit for work				Signature with date of the Factory Medical Officer/the Certifying Surgeon
								Date	Signs and Symptoms observed during examination	Nature of tests & results there of	Result Fit/Unfit	Period of temporary withdrawal from that work	Reason for such withdrawal	Date of declaring him unfit for that work	Date of issuing fitness certificate	
1								9	10	11	12	13	14	15	16	17
pink					25/2/2000			28/2/19	NUM	NUM	Fit				28/2/19	
pink					11			13/12/19	NUM	NUM	Fit				12	
pink					11			31/5/19	NUM	NUM	Fit				31/5/19	
pink								21/6/20	MILC		Fit				21/6/20	
pink								28/5/21	NUM	NUM	Fit				28/5/21	
pink																
pink								21/12/21	NUM	NUM	Fit				21/12/21	

FCIND = 75999

FORM No. 32 Health Register (Prescribed under R.L.E. 68-T and 102)

1. Sr. No. of Adult workers:
 2. Name of Worker:
 3. Sex:
 4. Date of Birth:
 5. Date of Join:
 Cont. No. -

DOT - 16/11/2010
 DOS - 16/7/1971

1. Department/ Works	2. Name of Hazardous Processes	3. Dangerous Process	4. Nature of Job or Occupation	5. Raw Materials, Products or by products likely to be exposed to	6. Date of Posting	7. Date of leaving/ transfer to or transfer	8. Reasons for discharge/ leaving or transfer	9. Medical examination and the results thereof				10. If declared unfit for work				12. Signature with date of the Factory Medical Officer/ty Certifying Surgeon
								9. Date	10. Signs and Symptoms observed during examination	11. Nature of tests & results there of	12. Result	13. Period of temporary withdrawal from that work	14. Reason for such withdrawal	15. Date of declaring him unfit for that work	16. Date of Issuing fitness certificate	
Ref 3			Dr. Operator	Acid Cellar	16/11/10			18/7/19	Nil	Nil	Fit				18/7/19	MC
Ref 3			Dr. Operator	Acid Cellar	16/11/10			19/8/15	Nil	Nil	Fit					MC
Ref 3			Dr. Operator	Acid Cellar	16/11/10			10/4/19	Nil	Nil	Fit					MC
Ref 3			Dr. Operator	Acid Cellar	16/11/10			3/7/18	Nil	Nil	Fit				3/7/18	MC
Ref 3			Dr. Operator	Acid Cellar	16/11/10			5/9/19	Nil	Nil	Fit				5/9/19	MC
Ref 3			Dr. Operator	Acid Cellar	16/11/10			31/10/2010	Nil	Nil	Fit				31/10/2010	MC

Hindalco Industries LTD.**Unit: Birla Copper, Dahej****Feasibility of Water Harvesting**

Birla Copper, Hindalco's copper unit, is located at Dahej in the Bharuch district of Gujarat. This is one of the largest single-location copper smelters in the world with integrated port facilities. Dahej Harbor and Infrastructure Limited (DHIL) is strategically located to cater to the logistics and transportation needs of its customers. The copper unit at Dahej comprises copper smelters, backed by a captive power plant, oxygen plants, by-products plants, utilities and a captive jetty. There is also a precious metals recovery plant at Dahej, which produces gold, silver and selenium.

The Hindalco Industries LTD is situated near Gulf of Khambat which is approximately 3km away from sea. The company has developed rain water harvesting structure and the harvested water is utilized in green belt development. The ground water table of this area is high hence the recharging of ground water is not possible.


Ministry of Environment, Forest and Climate Change
Government of India

"Pro Active and Responsive facilitation by Interactive, Virtuous and Environmental Singlewindow Hub"

sanjay.k@adityabirla.com

[E-KYC](#)
[EC Condition Upload](#)
[Raise Complaint](#)
[My Proposal\(s\)](#)
[Dashboard](#)
[Approvals](#)
[My Account](#)
[Logout](#)

List of EC Granted Proposals for uploading condition

ID	Proposal_no	Type Of Proposal	Type of Application	Project Details	Edit EC Condition	View EC Condition	Status
1	J-11011/85/2002-IA II (I)	EC	Category A	File Name : J-11011/85/2002-IA II (I) Project Name : Expansion of Copper Smelter and setting up of Zinc smelter plant by M/s Hindalco Industries Limited at Village Lakhigam and Dahej, Tehsil Vagra, District Bharuch in Gujarat- Environmental Clearance reg. State Name : Gujarat	Edit Condition Uploaded	View Condition Uploaded Report	Submitted
2	J-11011/7/94 - I A II	EC	Category A	File Name : J-11011/7/94 - I A II Project Name : : Establishment of copper smelting plant having capacity 1.0 MTPA, based on imported copper concentrate to be received at proposed captive jetty (270mts x 270mts) at the distance of 2 km from shore line. It is also considered that the Sulphuric acid (296000 TPA) Phosphoric acid (50000 TPA), Silver (26 TPA), Gold (3.0 Kg/Annum). State Name : Gujarat	Edit Condition Uploaded	View Condition Uploaded Report	Submitted
3	J-11011/220/2004-I A II (I)	EC	Category A	File Name : J-11011/220/2004-I A II (I) Project Name : Phase-III Copper Smelter expansion project by M/s Hindalco Industries Limited from 2,50,000 TPA and from 67.35 to 146.50 MW Captive Power Plant at Village Lakhigam and Dahej, Tehsil Vagra, District Bharuch in Gujarat State Name : Gujarat	Edit Condition Uploaded	View Condition Uploaded Report	Submitted
4	J-11011/81/2000-I (A) II (I)	EC	Category A	File Name : J-11011/81/2000-I (A) II (I) Project Name : Copper Smelter expansion and Copper foil plant by M/s Indo Gulf Corporation Limited at Dahej, District Bharuch State Name : Gujarat	Edit Condition Uploaded	View Condition Uploaded Report	Submitted
5	J-11011/927/2008-IA II (I)	EC	Category A	File Name : J-11011/927/2008-IA II (I) Project Name : Expansion of Continuous Cast Copper Rod Plant (CCR) capacity from 2, 40,000 TPA to 4, 84,000 TPA by setting up of a New CCR plant of 2, 44,000 TPA capacity by M/s Hindalco Industries Ltd., located at Village(s) Lakhigam and Dahej, Tehsil Vagra, District Bharuch Gujarat.- Environmental Clearance regarding. State Name : Gujarat	Edit Condition Uploaded	View Condition Uploaded Report	Submitted
6	J-11011/927/2008-I A II (I)	EC	Category A	File Name : J-11011/927/2008-I A II (I) Project Name : Expansion of Continuous Cast Copper Rod (CCR) Plant (120000 to 240000 TPA) by de-bottlenecking at GIDC Industrial Area, Dahej, Lakhigam, District Bharuch by M/s Hindalco Industries Limited (Unit: Birla Copper, Dahej) - Environmental Clearance reg. State Name : Gujarat	Edit Condition Uploaded	View Condition Uploaded Report	Submitted

[+ Add](#)

Add EC Granted Proposal which are not available in above table

Windows Taskbar: Type here to search | 25°C Smoke | 13:20 22-12-2021

**Hindalco Industries LTD.
Unit: Birla Copper, Dahej**

Photograph Main Gate Display Board

1. Main Gate Display Board

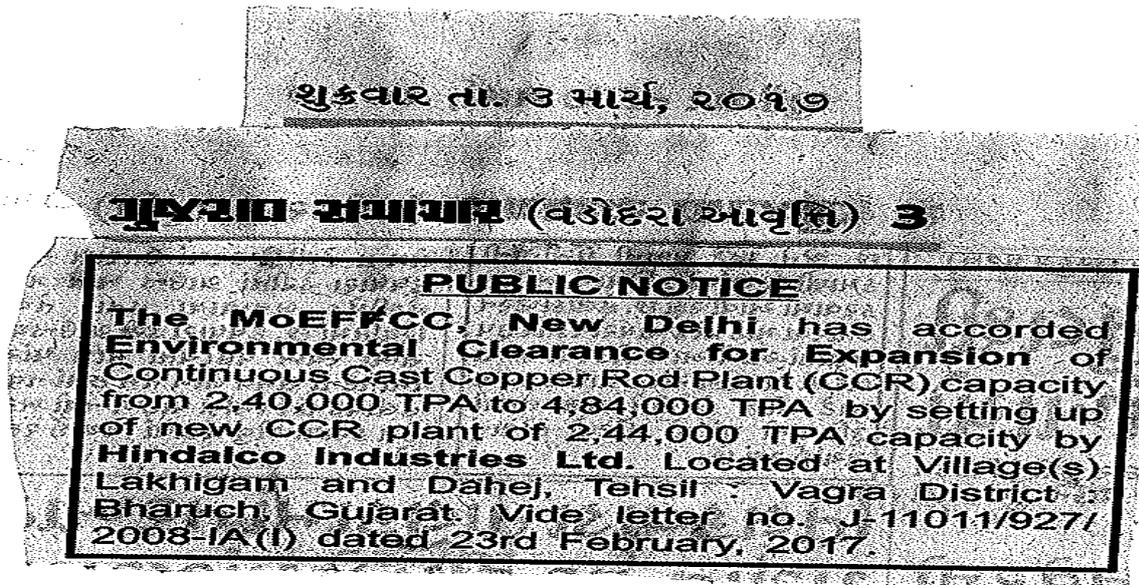


Hindalco Industries LTD.

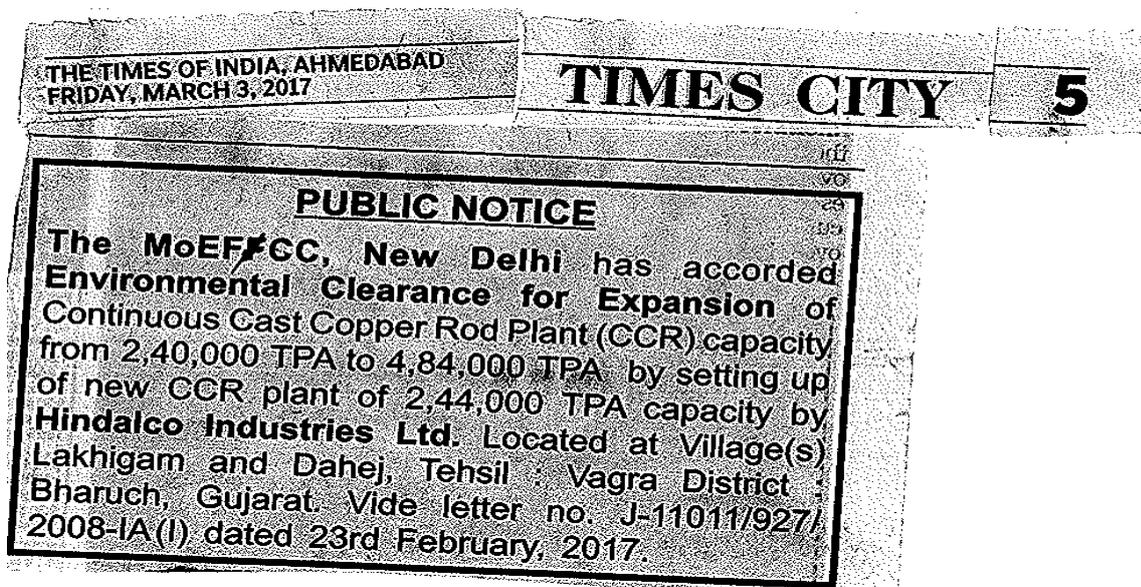
Unit: Birla Copper, Dahej

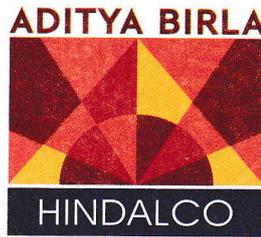
News Paper cutting of CCR-III EC clearance publication in local News paper

1. GUJARAT SAMACHAR 3rd March 2017



2. THE TIMES OF INDIA 3rd March 2017





CERTIFICATE

This is to certify that the capital expenditure made for the CCR-III Plant are funded from internal accruals in the M/s Birla Copper, a unit of Hindalco Industries Limited, a company registered under Companies Act, 1956, having its registered office at Ahura Centre, 1st Floor, B-Wing, Mahakali Caves Road, Andheri (East), Mumbai- 400093 and manufacturing facility set up at P.O. Dahej, Dist. Bharuch-392130, Gujarat is Rs. 23650 Lacs.


Place: Bharuch (Navendra Sahu)
AVP, Finance

Date: 03.01.2022

HINDALCO INDUSTRIES LIMITED

(UNIT : BIRLA COPPER)

P.O. : Dahej, Dist. Bharuch,
Gujarat-392 130, INDIA.

Telephone +91 2641 256004-6
Fax +91 2641 251002-3

Regd. Ahura Centre, 1st Floor, B-Wing,
Mahakali Caves Road, Andheri (East), Mumbai 400 093
Telephone +91 22 6691 7000 / Fax : +91 22 6691 7001

Website

www.hindalco.com

Email

hindalco@adityabirla.com

Corporate Identity No. L27020MH1958PLC011238

Hindalco Industries LTD.
Unit: Birla Copper, Dahej

Capital Cost of Pollution Control Equipment		
S. No.	Pollution Control Equipments Installed	Capital Cost (In Lakh)
1	Dryer bag filter & de dusting system	669
2	Alkali Scrubber Smelter-1	8500
3	Water Cool hood Smelter-1 Converter 1,2 &3	1770
4	Ventilation hood from S & C furnace & bag house	150
5	ESP's of smelter-III	518
6	ESP's of CPP	400
7	Alkali Scrubber of Smelter –III	694
8	Effluent Treatment –II	1000
9	Sewage Treatment Plant-II	100
10	Sulfuric Acid Plant –III	8595
11	Tail Gas Scrubber SAP-III	3466.69
12	SLF for ETP waste	700
13	PG, slag & Fly ash yard- for Phase-III	2000
14	Bag filters for CHP CPP-III and ash management	800.38
15	Liberator scrubber	141
16	PMR plant Bag filter	50
17	Fluorine scrubbing system in PAP-III	203.08
18	Scrubbing system for DAP-III plant	300
19	Green belt development	600
20	Tertiary Water Recycling Unit	6754
21	Wind fencing for coal yard	1395
Total		38806(388.06 crores)

Recurring Cost of Pollution Control Equipment		
Sr.No.	Particulars	Cost (in Lakh) for period of April-20 to Mar-21
1	Effluent Treatment Plant (main)	
	(a) Chemical Consumption	2138.97
	(b) Repair and Maintenance	120.24
	(c) Electrical Cost	7.87
	(d) Secured land fill facility	221.76
	(e) Construction cost of SLF-8	458.92
2	Solid Waste Management	
	(a)ETP waste handling & compaction	282.27
	(b) Gypsum handling & compaction	505.44
	(c) Slag & ash handling	44.71
3	Sulphuric Acid Plants	
	(a) Consumption of chemical, fuel, etc.	2014.16
	(b) Repair and Maintenance	390.52
	(c) Electrical Cost	47.68
4	Environmental Monitoring and Studies	52.85
5	Smelter, Refinery & PMR plant	
	(a) Bag filter replacement	65.2
	(b) Scrubber operation	875
	(c) ESP operation	50
	(d) Bag filter, Scrubber & ESP Smelter-3	116.57
	(e) PMR plant	25
6	Phosphoric Acid Plant & DAP plant	
	(a) Scrubbing system operation	25
7	Captive Power Plants	
	(a) ESP, I D fan & Ash handling operation	1015.92
8	Horticulture / green belt work	78.67
Total		8536.75

Hindalco Industries LTD.

Unit: Birla Copper, Dahej

Solar Lights

Birla Copper, Hindalco's copper unit, is located at Dahej in the Bharuch district of Gujarat. This is one of the largest single-location copper smelters in the world with integrated port facilities. Dahej Harbor and Infrastructure Limited (DHIL) is strategically located to cater to the logistics and transportation needs of its customers. The copper unit at Dahej comprises copper smelters, backed by a captive power plant, oxygen plants, by-products plants, utilities and a captive jetty. There is also a precious metals recovery plant at Dahej, which produces gold, silver and selenium.

At Birla Copper Dahej, we have installed 27 Nos of Solar lights across our entire complex (Plant + Township).

The following are sample images of Solar lights installed



In front of MCC Room



Lagoon Side Entry of TWRU

**Hindalco Industries LTD.
Unit: Birla Copper, Dahej**

Process Description Tertiary Water Recovery Unit

The Hindalco Industries Ltd. Unit: Birla Copper, is located at Dahej in the Bharuch district of Gujarat. This is one of the largest single-location copper smelters in the world with integrated port facilities. Dahej Harbor and Infrastructure Limited (DHIL) is strategically located to cater to the logistics and transportation needs of its customers. The copper unit at Dahej comprises copper smelters, backed by a captive power plant, oxygen plants, by-products plants, utilities and a captive jetty. There is also a precious metals recovery plant at Dahej, which produces gold, silver and selenium.

We have installed a Tertiary Water Recovery Unit supplied by M/s Suez India Pvt. Ltd. to treat and recycle reject water from our existing RO plant. The plant is constructed and is ready for commissioning.

The following is the treatment process of Tertiary Water Recovery Unit

Treatment Process

a). Equalization Tank:

Equalization tank is used to homogenize the variation in flow rate, temperature and contaminants concentration in the influent. This improves the performance of downstream processes and reduces the size & cost of downstream treatment facilities. Stabilization is aided by air mixing. High concentrated reject water from existing RO been feed in to equalization tank with a flow rate of 83.3 M3/hr.

Capacity: 600 M3

HRT: 5 Hrs

b). High rate solid contact clarifier (HRSCC)

HRSCC is the most important part of pre-treatment wherein 90% of heavy metals are removed. HRSCC is used wherein the influent quality varies continuously. It can accommodate much wide range of input parameters. The principle is to allow mixing of existing flocs with influent to create dense flocs, which can settle easily.

Size : 10 m Dia X 4.5m SWD + 0.4 m FB

MOC: RCC EP

Reaction:

Soda Softening $\text{Na}_2\text{CO}_3 + \text{CaSO}_4 \rightarrow \text{CaCO}_3 + \text{Na}_2\text{SO}_4$

Dolomite: Dolomite + Silica \rightarrow tremolite + Carbon di oxide + Calcite

c).Sub merge UF.

Sub UF is hollow-fibre outside-in feed membrane is ideal for treating waters with high solid concentrations These high quality membranes separate out suspended solids and water. The permeate water separated is of very high purity. It will handle feed water turbidity spikes, variations in water quality. The same module works as a standalone unit in a rack. COD – BOD are almost reduced by 80%

d). SWRO.

Osmosis is the flow of solvent through a semi-permeable membrane, from a dilute solution to a concentrated solution. This flow results from the driving force created by the difference in pressure between the two solutions. Osmotic pressure is the pressure that must be added to the concentrated solution side in order to stop the solvent flow through the membrane. Reverse osmosis is the process of reversing the flow, forcing water through a membrane from a concentrated solution to a dilute solution to produce filtered water. Membranes are manufactured principally for use in water purification/ desalination. A TFC membrane can be considered as a molecular sieve constructed in the form of a film from two or more layered materials. RO Membranes are made out of a thin polyamide layer (<200 nm) deposited on top of a polysulfone or polysulfone porous layer (about 50 microns) on top of a non-woven fabric support sheet. The three-layer configuration, the desired properties of high rejection of undesired materials (like salts), high filtration rate, and good mechanical strength. The polyamide top layer is responsible for the high rejection and is chosen primarily for its permeability to water and relative impermeability to various dissolved impurities including salt ions and other small, unilateral molecules. Reverse osmosis (RO) membranes feature the smallest pores and involve, appropriately enough,

the reversal of osmotic pressure in order to drive water away from dissolved molecules. Strictly speaking, RO is not a size exclusion process based on pore size; it depends on ionic diffusion to affect separation. 75% of the high concentrated reject water from existing RO will be recovered as a good quality water and remaining 25% shall be send to thermal system.

e). Deaerator

The dissolved gases normally present in water cause many corrosion problems. For instance, oxygen in water produces pitting that is particularly severe because of its localized nature. Carbon dioxide corrosion is frequently encountered in preheating systems and less commonly in water distribution systems. Water containing ammonia, particularly in the presence of oxygen, readily attacks copper and copper-bearing alloys. The resulting corrosion leads to deposits on boiler heat transfer surfaces and reduces efficiency and reliability.

In order to meet industrial standards for both oxygen content and the allowable metal oxide levels in feed water, nearly complete oxygen removal is required. This can be accomplished only by efficient mechanical deaeration supplemented by an effective and properly controlled chemical oxygen scavenger.

g). Crystallizer.

Crystallisation is used for the production, purification and recovery of solids. – Enthalpy of a pies of crystallisation are generally much lower than enthalpies of vaporisation, and crystallisation may be carried out closer to ambient temperature thereby reducing energy requirements. - Crystallization separates a material from a supersaturated solution by creating crystal nuclei and growing these nuclei to the desired size.

Crystallizers typically have an external heater, a two-pass horizontal or one-pass vertical, in which the solution is heated by steam in the shell. The heated solution then flashes into a large vessel called a vapour body. The heater tubes are flooded, with boiling water in the tubes suppressed by the liquid elevation in the vapour body (submergence). A slipstream is drawn off into a solids separation device (typically a centrifuge or automatic pressure filter) and crystals are re-moved. Mechanical driven thermos compressor used in crystallizer to reduce steam consumption.

i). Centrifuge

A decanter centrifuge separates solids from one or two liquid phases in one single continuous process. This is done using centrifugal forces that can be well beyond 3000 times greater than gravity. When subject to such forces, the denser solid particles are pressed outwards against the rotating bowl wall, while the less dense liquid phase forms a concentric inner layer.

Hindalco Industries LTD.

Unit: Birla Copper, Dahej

Water Sprinkling on Plant Internal Road





भारत सरकार
GOVERNMENT OF INDIA
पर्यावरण एवं वन मंत्रालय
MINISTRY OF ENVIRONMENT & FORESTS

क्षेत्रीय कार्यालय, पश्चिम क्षेत्र,
Regional Office, Western Region,
"केन्द्रीय पर्यावरण भवन"

"Kendriya Paryavaran Bhavan
लिंक रोड नं०-३, Link Road No. 3
E-5, रविशंकर नगर/Ravi Shankar Nagar,
भोपाल (म०प्र०)/Bhopal-462016 (M.P.)
फोन-0755-2466525, 2463102 (Fax), 2465496
अणुडाक /E-mail: apccfbhopal@gmail.com

No 6-GJC 075/2006-BHO/ 1184

23/7/13

To,

The Principal Secretary,
Govt. of Gujarat,
Forest and Environment Department,
14/8, Sardar Bhawan,
Sachivalaya, Gandhinagar
(Gujarat)

Sub: Diversion of 16.00 ha of reserved forest land for setting up of 60 MW Power Plant DAP/ NPK and Pap projects alongwith Copper Smelter Expansion Project Phase-III in favour of Hindalco Industries in Bharuch District of Gujarat.

- Ref: 1. This office letter No. 6-GJC 075/2006-BHO/2658 dated 16/03/2007 and letter of even No. 319 dated 21/02/13
2. Govt. of Gujarat letter No. FCA-1006 (10-15)SF-87-K dated 13/05/2010 letter of even dated 22/04/2013 and APCCF & Nodal Officer, Gujarat letter No. FCA/29/A/201-202/13-14 dated 08/07/2013
3 Officer on Special Duty (Ad-hoc CAMPA) MoEF, New Delhi letter No. 1-12/2013-CAMPA dated 15/07/2013

Sir,

I am directed to invite a reference to your letter No. FCA-1006-(10-15) SF-87-k dated 01/12/2006 and dated 03/01/2007 on the above mentioned subject seeking prior approval of the Central Government under Section-2 of the Forest (Conservation) Act, 1980.

The Central Government vide letter (1) referred above had agreed in principle for diversion of the above forest land for the purpose mentioned, subject to the fulfillment of condition No. 2(b), 3, 4, 5, 8(b), 9 and 10 stipulated therein.

The Govt. of Gujarat, Gandhinagar vide letter (2) referred above has reported compliance on the fulfillment of the said conditions 2(b), 3, 4, 5, 8(b), 9 and 10 of the in-principle approval order.

The undersigned, therefore is directed to convey hereby the formal approval of the Central Government under Section 2 of the Forest (Conservation) Act, 1980 for diversion of 16.00 ha of reserved forest land for setting up of 60 MW Power Plant DAP/ NPK and Pap projects alongwith Copper Smelter Expansion Project Phase-III in favour of Hindalco Industries in Bharuch distirct, subject to the following terms and conditions:-

- 1.. The legal status of the forest land shall remain unchanged.

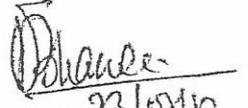
Kartik/M/others.doc

Contd...2

23/7/13

Copy to :-

1. The Director, ROHQ, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, Lodi Road New Delhi - 110003.
2. The Addl. Principal Chief Conservator of Forest and Nodal Officer (Forest Conservation) Act, Aranya Bhavan, Block No. A/3, Near "Ch" Circle, Opposite St. Xaviers High School, Sector-10A, Gandhinagar (Gujarat).
3. Dy. Conservator of Forests, Rajpipla (West), District- Bharuch, Gujarat.
- ✓ 4. The Hindalco Industries Ltd (Unit Birla Copper), Village- Dahej, Ta- Vagra, District- Bharuch, Gujarat.
5. Order File.



(S.K. Bhandari) 23/07/13

Chief Conservator of Forests(C)



Acknowledgement copy

Date :05th July-2021

PCB ID: 15178

To,
The Member Secretary
Gujarat Pollution Control Board
Paryavaran Bhavan
Sector -10 A
Gandhinagar - 382 010

Subject: Submission of Environmental statement for the financial year 2020-21

Dear Sir,

We are submitting herewith the environmental statement for Hindalco Industries Ltd. Unit: Birla Copper for the financial year ending on 31 March 2021. This is in accordance with the provisions of rule 14 of the Environment Protection (Amendment) Rules 1993 of the Environment Protection Act 1986 published vide notification dated 22-04-93 in the Gazette of India Extra ordinary part-II, section-3 sub section (I), no.1155 dated 27-04-93 by Ministry of Environment and Forests.

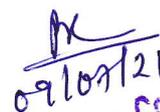
Thanking you,

Yours faithfully,

For: HINDALCO INDUSTRIES LTD.
(Unit: Birla Copper, Dahej)


Dr. Sanjay Kumar
HOD (Environment)

Encl: as above


09/07/21
Gujarat Pollution Control Board
Sector No. 10 A,
Gandhinagar - 382 010.

HINDALCO INDUSTRIES LIMITED

(UNIT: BIRLA COPPER)

P.O. : Dahej, Dist. Bharuch,
Gujarat-392 130, INDIA.

Telephone +91 2641 256004-6

Fax +91 2641 251002-3

Regd. Ahura Centre, 1st Floor, B-Wing,
Mahakali Caves Road, Andheri (East), Mumbai 400 093
Telephone +91 22 6691 7000 / Fax : +91 22 6691 7001

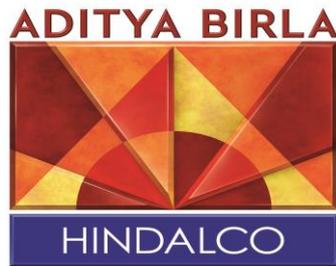
Website

www.hindalco.com

Email

hindalco@adityabirla.com

Corporate Identity No. L27020MH1958PLC011238



**Hindalco Industries Limited.
Unit: Birla Copper, Dahej.**

**ENVIRONMENT
STATEMENT
FOR**

Year 2020-21

**PO: DAHEJ, LAKHIGAM
DIST: BHARUCH - 392 130 GUJARAT, INDIA**

FORM – V

(See Rule 14) *

Environmental statement for the Financial Year ending on 31st March 2020.**PART – A**

(i)	Name and address of the owner / occupier of the industry operation of process Address of the owner :	:	Mr. Mr. K.N. Bhandari Director, 5 New Power House Road Sector-7 Jodhpur-342004
(ii)	Industry category – Primary – (STC Code) Secondary – (SIC Code)	:	Ours is DGTD (Director General of Trade and Development) registered company.
(iii)	Production capacity units	:	As below

Sr.No	Product	Production Capacity
1	Copper Cathode	5,00,000 TPA
2	Sulphuric Acid	14,70,000 TPA
3	Oxygen (Tech)	7,80,000 TPA
4	Gold	26 TPA
5	Silver	200 TPA
6	C C Rod	4,84,000 TPA
7	Phosphoric Acid	3,60,000 TPA
8	DAP / NPK fertilizer	8,72,000 TPA
9	Electric Power	145.60 MWH
10	Copper Wire (\leq 4 mm dia)	60000 TPA

(iv)	Year of establishment	:	February-1995
(v)	Date of last Environment Statement	:	21 st July 2020

PART – B**Water and Raw Material Consumption:**

(i)	Water consumption m³ / day		m ³ /day
	Process	:	1511
	Cooling	:	14166
	Domestic	:	913

Sr No.	Name of products	Process water consumption per unit of product output	
		During the previous Financial Year 2019-20	During the current Financial Year 2020-21
1	Copper Cathode	0.642 m3/MT	0.567 m3/MT
2	Sulphuric Acid	0.095 m3/MT	0.071 m3/MT
3	Oxygen (Tech)	Nil	Nil
4	Gold/Silver	0.013 m3/MT	0.018 m3/MT
5	CC Rod	Nil	Nil
6	Phosphoric Acid	2.79 m3/MT	9.104 m3/MT
7	DAP/NAP Fertilizer	0.284 m3/MT	0.503 m3/MT
8	Electric Power	0.094 m3/MW	0.096 m3/MW
9	Copper Wire (≤ 4 mm dia)	Nil	Nil

(ii) Raw material consumption:

Sr. No.	Name of Raw material	Product	Consumption of Raw material In units of output (MT)	
			During the previous Financial Year 19-20	During the current Financial Year 20-21
1	Copper Concentrate	Copper Cathode	3.19 /MT	2.94 /MT
2	Silica	"	0.28 MT	0.254 /MT
3	Oxygen	"	1.30 /MT	1.27 /MT
4	Coal redundant	"	0.10 / MT	0.11/MT
5	Sulphuric Acid	"	0.095 /MT	0.071 /MT
1	Cathode Copper	CC Rod	1.00 MT	1.00 MT
1	Anode (DC) Slime	Gold	213.68 MT	157.05 MT
2	Anode (DC) Slime	Silver	22.51 MT	24.23 MT
1	SO ₂ Gas from Smelter	Sulphuric Acid	0.653 MT	0.653 MT
1	Rock Phosphate	Phosphoric Acid	3.34 MT	7.82 MT
2	Sulphuric Acid	"	3.07 MT	6.33 MT
1	Coal	Power Plant	0.59 MT/Mwh	0.56 MT/Mwh
1	Phosphoric Acid	DAP/NPK	0.466 MT	1.416 MT
2	Ammonia	"	0.244 MT	0.244 MT
3	Potash	NPK	0.00	0.00
1	Aluminum Hydroxide	AlF₃	0	0

PART – C

Pollution discharged to environmental / unit of output
(Parameters as specified in consent issued)

(a). Water

Sr. No	Pollutant	Qty. of pollutant discharge (mass/Day) Kg/Day	Concentration of pollutant discharge (mass/Vol.) mg/l	Percentage of variation from prescribed Std. With reason
1	pH	7.60	7.60	Nil
2	Temp	30.65	30.65	Nil
3	Color	5.08	10.17	Nil
4	Suspended Solids	9.84	19.68	Nil
5	COD	16.36	32.71	Nil
6	BOD 3 day at 27o C	4.45	8.90	Nil
7	Oil & Grease	<0.1	<0.1	Nil
8	Phenolic compound	<0.1	<0.1	Nil
9	Ammonical N2	4.65	9.30	Nil
10	Sulphides	<0.2	<0.2	Nil
11	Cyanides	Nil	Nil	Nil
12	Fluoride	0.80	1.59	Nil
13	Hexa. Chromium	0.17	0.34	Nil
14	Total Chromium	0.20	0.40	Nil
15	Copper	0.09	0.19	Nil
16	Nickel	0.04	0.08	Nil
17	Zinc	0.11	0.23	Nil
18	Mercury	<0.005	<0.005	Nil
19	Lead	<0.005	<0.005	Nil
20	Arsenic	0.02	0.05	Nil
21	Cadmium	<0.01	<0.01	Nil
22	Insecticides and Pesticides	Absent	Absent	Absent
23	Selenium	<0.01	<0.01	Nil
24	Bio-Assay Test	96.10	96.10	Nil

(b) Air

Sr.	Products / Stacks attached to	Quantity of pollutant discharged (in Kg/Hr)					Concentration of pollutant discharged (in mg/Nm ³)					Percentage of variation from prescribed standard with reason
-----	-------------------------------	---	--	--	--	--	--	--	--	--	--	--

The Flue emission through stack attached to:

Sr No.	Stack attached to	SO ₂	NOx	SPM	Acid mist	F	SO ₂	NOx	SPM	Acid mist	Fluorine	
1	Dore furnace of PMR plant	0.22	0.13	0.20	--	--	21.13	12.30	18.92	--	--	NIL
2	Package boiler	--	--	--	--	--	--	--	--	--	--	Nil
3	Sulphuric Acid Pre- heater-I	0.41	0.11	0.15	--	--	33.92	9.03	12.34	--	--	NIL
4	Sulphuric Acid Pre- heater-II	--	--	--	--	--	--	--	--	--	--	Nil
5	DG Set-I	--	--	--	--	--	--	--	--	--	--	Nil
6	DG Set-II	--	--	--	--	--	--	--	--	--	--	Nil
7	CFBC of CPP I	13.77	3.10	3.85	--	--	98.37	22.17	27.50	--	--	NIL
8	Shaft furnace of CCR plant-I	--	--	0.59	--	--	--	--	26.71	--	--	NIL
9	Shaft furnace of CCR plant-II	--	--	--	--	--	--	--	--	--	--	NIL
10	Sulphuric Acid Pre- heater-III	0.63	0.17	0.22	--	--	41.85	11.26	14.53	--	--	NIL
11	AFBC of CPP II	--	--	--	--	--	0.00	0.00	0.00	--	--	NIL
12	CFBC of CPP III	12.32	2.91	3.80	--	--	123.16	29.15	38.04	--	--	NIL
13	Shaft furnace of CCR plant-III	--	--	0.61	--	--	--	--	21.19	--	--	NIL

The Process emission through various stack attached to:

1	Anode Casting	ND	ND	0.57	--	--	ND	ND	13.50	--	--	NIL
2	Main stack attached to Secondary gas Scrubber	3.39	--	--	--	--	18.33	--	--	--	--	NIL
3	Copper Scrap Melting Furnace. (Cap 50 TPD)											
4	Main stack Slag Cleaning Furnace	0.87	--	1.89	--	--	16.68	--	36.40	--	--	NIL
5	Main Stack Sulphuric Acid plant - 1	37.58	--	--	--	--	375.85	--	--	ND	--	NIL
6	Cathode Stripping M/C Plant – 1	ND	--	--	--	--	ND	--	--	--	--	NIL

Sr.	Products / Stacks attached to	Quantity of pollutant discharged (in Kg/Hr)				Concentration of pollutant discharged (in mg/Nm ³)						Quantity of pollutant discharged (in Kg/Hr)
		SO ₂	NO _x	SPM	Acid mist	Fluori ne	SO ₂	NO _x	SPM	Acid mist	Fluorine	
7	Anode Scrap Washing M/C	0.000	--	--	--	--	0	--	--	--	--	NIL
8	Liberator Stack	0.000	--	--	--	--	0	--	--	--	--	NIL
9	Slag granulation	--	--	0.96	--	--	ND	--	23.77	--	--	NIL
10	Steam Dryer for copper concentrate	--	--	0.46	--	--	ND	--	18.53	--	--	NIL
11	Slag Cleaning Furnace (By pass vent)	0.000	--	--	--	--	0	--	--	--	--	NIL
12	Cathode Stripping M/C Plant – II	0.000	--	--	--	--	0	--	--	--	--	NIL
13	Centralized Scrubbing system Cu-III	3.29	--	2.68	--	--	17.70	--	14.50	--	--	NIL
14	Sulphuric Acid plant - III	3.28	--	--	--	--	20.40	--	--	ND	--	NIL
15	Cathode Stripping M/C – Refinery-III	0.000	--	--	--	--	0	--	--	--	--	NIL
16	Liberator Stack of Refinery-III	--	--	--	--	--	--	--	--	--	--	NIL
17	DAP	ND	ND	SPM 7.43	NH ₃ 4.43	HF 0.47	ND	ND	SPM 19.82	NH ₃ 11.8	HF 1.24	NIL
18	P S Converter Area (Gases are to transferred to H ₂ SO ₄ plant) only emergency vent.	0.0	----	0.0	----	----	0.0	----	0.0	----	----	NIL
19	Reactor (Phosphoric Acid Plant Fluorine)	----	----	----	----	HF 0.03	----	----	----	----	HF 1.96	NIL
20	PMR plant Phase -III	0.15	0.04	0.15	----	----	17.55	2.6	16.83	----	----	NIL

PART – D

1.Hazardous Wastes		
(a) From Process	During previous financial Year (2019-20)	During current financial. Year (2020-21)
Arsenic Bearing Sludge As-Cu precipitate (TPA)	39.59 MT	17.0 MT
Used Oil (Kl/Year)	88.82 MT	113.28 MT
Spent Electrolyte solution (Kl/Year)	38416 KL	29492 KL
Residue/ dust from SAP (TPA)	11.90 MT	12.0 MT
Spent catalyst (Kl/Year)	28 KL	28 KL
Used drums (No/Yr)	25.19 MT	50.95 MT
Flue gas cleaning residue (TPA)	527.90 MT	417.92 MT
Spent Resin from DM plant (Kl/Yr)	5.00 KL	Nil
Selenium & Selenium compound (TPA)	Nil	Nil
Silver compound (TPA)	0.38 MT	Nil
Inorganic acid (TPA)	92 MT	Nil
Dust & Lumpy	15825 MT	12063 MT
Copper Converting (C-Slag)	5836 MT	1812 MT
Liberator cake	2157 MT	2317 MT
Copper Revert	50885 MT	38451 MT
Dore slag	2013 MT	2547 MT
Lead Anode/Cathode	0	80.51 MT
Contaminated cotton rags or other cleaning materials	0	0
Glass-wool / Used Insulation	0	201.26 MT
Discarded PPE(Rubber)	0	0
Used membrane /Filter cloth and bags	0	15 MT
(b)From Pollution Control Facilities		
ETP waste sludge & Scrubber waste (TPA)	83658 MT	75835 MT

PART – E

(a) From Process:

Sr No.	By product/Solid waste	Quantity generated during current financial year (2019-20)	Quantity generated during current financial year (2020-21)
1	Selenium	30.36 MT	25.90 MT
2	PGM concentrate	0.260 MT	0.238 MT
3	Granulated slag	663500 MT	488794 MT
4	Phospho-gypsum	598864 MT	10703 MT
5	Hydrofluosilic acid	92 MT	Nil
6	Aluminium Fluoride	Nil	Nil
7	Fly Ash	101699 MT	83451 MT

(b) From Pollution Control Facilities :

Solid waste	Qty generated/sold during previous financial year (2019-20)	Qty generated /sold during current financial year (2020-21)
From Pollution Control Facilities	Nil	Nil

(c) Quantity recycled or re utilized within unit :

Solid waste	Quantity recycled or re-utilized in unit during previous financial year (2019-20)	Quantity recycled or re-utilized in unit during current financial year (2020-21)
Quantity recycled or re utilized with in unit	Nil	Nil

PART – F

Please specify the characterizations (in terms of concentration of quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Characterizations of hazardous waste as well as solid waste and disposal practice adopted for both these categories of wastes are mentioned below:

HAZARDOUS WASTE			Hazardous waste disposal practice adopted		
Sr. No.	Types of waste	Concentration of wastes	Method of collection/storage & disposal of wastes	Precautionary measures for handling, transport and other safety measures	Disposal
1	ETP Waste sludge & Scrubber waste	CaSO ₄ – 80 to 85%, Moisture-30 to 40%, Cu - 0.6 to 0.8%, Zn - 0.05 to 0.07%, Fe - 0.5 to 1.5%	Dewatered ETP waste is collected in dumper from Rotary Vacuum Drum Filter and disposed off in to cells of captive SLF developed within premises based on CPCB guidelines.	Manual handling of waste is avoided as it is directly loaded in to Dumper from Rotary Vacuum Drum Filter in ETP, and it is hydraulically unloaded in to captive Secured Landfill Facility for disposal.	Disposal in to cell of captive Secured Landfill
2	Arsenic bearing sludge As-Cu precipitate	Cu - 50 to 75 %, As - 5 to 7%	It is generated from Liberator section of Refinery plant. It is completely recycled to furnace of Smelter.	Manual handling / contact is avoided while handling, collected material is directly in a Boat from Liberator - III & charged in to furnace of Smelter plant. Safety equipment such as helmet, gloves, etc. are provided to employees.	Complete recycle in to smelter plant.
3	Used oil	Mainly oil & some moisture	It is generated from mechanical operations when equipment is taken for repair. Disposed off by sale to registered recyclers.	It is collected in barrels and tightly closed and stored in safe place.	It is sale to registered recyclers /re refiners

Sr. No.	Types of waste	Concentration of wastes	Method of collection/storage & disposal of wastes	Precautionary measures for handling, transport and other safety measures	Disposal
4	Spent Electrolyte solution	Mainly Copper and other metals	Spent electrolyte liquid generated from Refineries and is completely treated in ETP of Birla Copper.	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Complete treatment in ETP of Birla Copper
5	Residue dust from SAP	Mainly Copper, Iron & acid	It is the dust / acid containing residue generated due to cleaning of Sulphuric acid plant scrubbing system, which contains Copper and Iron too. It is completely recycled in to smelter plant furnace.	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Complete recycle in to smelter plant
6	Spent catalyst	Mainly Vanadium Pentoxide	It is a fines of catalyst generated during the annual Sulphuric acid plant shutdown. It is completely disposed off in SLF.	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Disposal in to cell of captive Secured Landfill
7	Used empty drums	Mainly de-foamer chemical	Empty used drums are cleaned and provided to register re processor. No hazardous waste is handled in drums.	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	It is sell to registered recyclers /re refiners
8	Flue gas cleaning residue	Mainly Copper and Iron	Dust is collected from gaseous stream with the help of Bag filter attached to Slag cleaning furnace in closed vessel and completely recycled to Smelter.	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Complete recycle in to smelter plant
9	Spent resin from DM plant	Mainly resins	It is generated when resins are replaced in DM water plant, which is used for water purification. Disposed off in to cells of captive SLF developed within premises based on CPCB guidelines.	It is collected in barrels and closed and stored in safe place before disposal in to cell of TSDF.	Disposal in to cell of captive Secured Landfill
10	Selenium & selenium compounds	Mainly Selenium	Dust from furnaces is collected from gaseous stream with the help of Bag filter attached to Dore furnace of PMR plant in closed vessel and completely recycled to Smelter.	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Complete recycle in plant

Sr. No.	Types of solid waste	Composition of wastes (Tentative)	Method of collection/storage & disposal of wastes	Precautionary measures for handling, transport and other safety measures	Disposal
11	Silver compounds	Mainly Silver	Dust from furnaces is collected from gaseous stream with the help of Bag filter attached to Dore furnace of PMR plant in closed vessel and completely recycled to Smelter.	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Complete recycle in PMR plant
12	In organic acid	Mainly Fluoride and silica	It is a by-product generated from fluorine recovery section from PAP plant.	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	It is used to manufacture AlF_3 and also Sold to actual users to manufacture other Fluoride compounds.
13	Dust & Lumpy	Cu: 33-40%, As: 0.5-1.3%, Ag: 60-90 g/t, Bi: 300ppm, Pb: 0.5- 1.0%	Collection, Storage, transportation and recycled in smelter or sell to recyclers	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Recycled in plant and sell to registered recyclers..
14	Copper converting slag (C slag)	Cu - 10 to 20 %, Fe - 45 to 50 % SiO ₂ - 0.2 to 1.0 % CaO- 10 to 20 % S - 0.5-3.0 %	Collection, Storage, transportation and recycled in smelter or sell to recyclers	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Recycled in plant and sell to registered recyclers
15	Liberator cake	Cu: 85-95%, As: 0.30-1.0%, Au: 15-25 g/t, Ag: 280 ppm, Bi: 3000ppm, Sb: 1700ppm	Collection, Storage, transportation and recycled in smelter or sell to recyclers	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Recycled in plant and sell to registered recyclers
16	Copper Revert	Cu - 30 to 35 %,	Collection, Storage, transportation and recycled in smelter or sell to recyclers	It is collected in barrels and closed and stored in safe place before disposal in to cell of TSDF.	Recycled in plant and sell to registered recyclers
17	Dore slag	Cu – 1.0 to 2.0 %, Au – 50 to 200 ppm Ag – 0.5 to 2.0 % Bi – 2.0 to 3.0 % Pb – 20 to 30 %	Collection, Storage, transportation and recycled process or sell to recyclers	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Recycled in plant and sell to registered recyclers
18	Lead Anode/ Cathode	Mainly Lead	Collection, Storage, Transportation and recycle in smelter or sell to recyclers.	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Recycled in plant and sell to registered recyclers
19	Cotton waste used (Contaminated cotton rags or other cleaning materials)	Mainly used cotton rags	Collection, Storage, Transportation and Disposal to CHWIF.	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Disposal to CHWIF
20	Used Insulation	Mainly used insulation waste	Collection, Storage, Transportation and Disposal in furnace or into own SLF site / common TSDF of BEIL	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Disposal in own furnace or into own Secured Landfill/ common TSDF of BEIL
21	Discarded PPE (Rubber)	Mainly used PPE	Collection, Storage, Transportation and Disposal in furnace or into own SLF site / common TSDF of BEIL	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Disposal in own furnace or into own Secured Landfill/ common TSDF of BEIL
22	Used membrane/ Filter cloth and bags	Mainly used filter cloth/ membrane	Collection, Storage, Transportation and Disposal in furnace or into own SLF site / common TSDF of BEIL	Safety equipment such as helmet, gloves, etc. is provided to employees working in the area.	Disposal in own furnace or into own Secured Landfill/ common TSDF of BEIL

Part – G

**DETAILS OF REVENUE EXPENDITURE FOR ENVIRONMENT PROTECTION
MEASURES AT HINDALCO INDUSTRIES LTD., UNIT: BIRLA COPPER, DAHEJ**

Sr.	Details	Expenditure (in Lacs. Rs.) for period of April-20 to Mar-21
1	Effluent Treatment Plant (main)	
	(a) Chemical Consumption	2138.97
	(b) Repair and Maintenance	120.24
	(c) Electrical Cost	7.87
	(d) Secured land fill facility	221.76
	(e) Construction cost of SLF-8	458.92
2	Solid Waste Management	
	(a)ETP waste handling & compaction	282.27
	(b) Gypsum handling & compaction	505.44
	(c) Slag & ash handling	44.71
3	Sulphuric Acid Plants	
	(a) Consumption of chemical, fuel, etc.	2014.16
	(b) Repair and Maintenance	390.52
	(c) Electrical Cost	47.68
4	Environmental Monitoring and Studies	52.85
5	Smelter, Refinery & PMR plant	
	(a) Bag filter replacement	65.2
	(b) Scrubber operation	875
	(c) ESP operation	50
	(d) Bag filter, Scrubber & ESP Smelter-3	116.57
	(e) PMR plant	25
6	Phosphoric Acid Plant & DAP plant	
	(a) Scrubbing system operation	25
7	Captive Power Plants	
	(a) ESP, I D fan & Ash handling operation	1015.92
8	Horticulture / green belt work	78.67
	Total	8536.75

PART – H

Additional measures / investment proposal for environmental protection including abatement of pollution.
<ul style="list-style-type: none"> Impact of the pollution control measures taken for the existing plants operations of environmental control units such as Effluent Treatment Plant, Sewage Treatment Plant, Scrubbers, Electro Static Precipitators (ESP's), Bag filters, etc. were continued efficiently throughout the year with a view to meet the norms specified by GPCB. We are in process for upgradation of Smelter-1 & PMR plant Scrubbers as an additional measure .
<ul style="list-style-type: none"> Birla Copper has been accredited with ISO-14001:2004 (Environment Management System) & ISO-9001:2008 (Quality Management System), OHSAS 18001: 2007 certifications from Inter-Tek System Certification. Accordingly, all Environmental Management System are being implemented as per the requirement of ISO –14001:2004 systems.
<ul style="list-style-type: none"> Online Continuous Emission Monitoring Station ,61 OCEMS ,3 CAAQMS and Treated Effluent online monitoring station installed.

PART – I

Any other particular in respect of environmental protection and Abatement of pollution.
<p>1. Tertiary water recycling unit: TWRU involves a range of advanced wastewater treatment technologies to recycle recovery and re-use of the 'treated' wastewater and thereby ensure there is no discharge of wastewater to the environment. The project of TWRU is expected to be completed up to end of 2021.</p>
<p>2. Structural up liftment is carried out in Smelter-I, Smelter-III, SAP-I and SAP-III, such as coloring to the structure of plant and strengthen the plant to avoid corrosion.</p>
<p>3. Revamping of Secondary Gas Scrubber of Smelter-1. The objective of the proposal is for improved environmental performance by bringing down the emission level of secondary off gases, by revamping Secondary Gas Scrubber of Smelter-1 plant.</p>
<p>4. Pneumatic system for lime dosing at our ETP Plant is Installed. It has eliminated current manual lime dosing practice and help in to control fugitive emission, dust spillages and eliminate waste generation of Plastic Bags</p>
<p>5. Reliable and sustainable system for segregation of process and storm water drain.</p>
<p>6. Venturi and caustic (NaOH) based scrubber technology has been considered for installation in PMR plant.</p>
<p>7. Installation of Tail Gas Scrubber in Sulphuric Acid Plant-I .</p>
<p>8. Installation of Bag filter at transfer points ,Coal yard and Captive power plant.</p>
<p>9. Installation of wind screen all around peripheral of Coal Yard.</p>
<p>10. Installed Tail Gas Scrubber in Sulphuric Acid Plant-3 for better control of SO2 emission.</p>
<p>11. To mark the celebration of World Environment Day, plantation programme will be organized at Birla Copper, to bring environmental awareness among the employees.</p>

Date: 05th July-2021

Yours Faithfully
For Hindalco Industries Ltd.
 Unit: Birla Copper, Dahej

Dr Sanjay Kumar
 HOD (Environment)

Place: Dahej

Acknowledgement copy
98 1409
GPCB, Gandhinagar



HIL/BC/Env./GPCB/BH-20-21

PCB ID:15178

Date: 26th Nov 2021

Mr. S.J. Pandit, IFS (RETD.)
Member Secretary
Gujarat Pollution Control Board
Paryavaran Bhavan
Sector 10-A
Gandhinagar (Guj.)

Subject: Submission of Bank Guarantee to the Notice of Direction u/s. 5 of Environment (Protection) Act, 1986 dated 16.11.2021 no. GPCB/BRCH-B/CCA-310(20)/ID:15178

Reference: Notice of Direction dated 16.11.2021 u/s. 5 of Environment (Protection) Act, 1986 for the Violation of the Hazardous Waste (Management & Transboundary Movement) Rules-2016 as amended from time to time

Dear Sir,

We are in receipt of your Notice of Direction referred above on the subject and subsequently we have submitted our interim reply to your esteemed office dated 17.11.2021.

We have taken note of the contents of your letter, and as directed, we are submitting herewith a Bank Guarantee with the sum of INR 20 lakhs issued by State Bank of India in favour of Chairman Gujarat Pollution Control Board, Gandhinagar bearing no. **0033921BG0000022** dated 24th Nov 2021.

We are committed to abide by all the statutory rules and regulations under all the applicable laws. Sir, we remain available for any clarification that you may require.

Thanking you.

Yours faithfully,

For Hindalco Industries Limited,

Unit Birla copper Dahej

Dr. Sanjay Kumar

Head – Environment

Encl: a/a

N. N. D.
26/11/2021
Gujarat Pollution Control Board
Head Office
Sector No.-10-A,
Gandhinagar-382010.

CC:

1. The PCCF & HOFF

Aranya Bhawan

Near CH-3 Circle ,

Sector-10 A, Gandhinagar

2. Regional Officer,

Gujarat Pollution Control Board

Regional Office

Bharuch

STATE BANK OF INDIA
MAIN BRANCH,
BHARUCH
GUJ/SOS/AUTH/AV/163/2007



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STATE BANK OF INDIA
BHARUCH BRANCH
STATION ROAD
BHARUCH, GUJARAT

STAMP DUTY GUJARAT
Tel No. :
Fax No. : 02642-241594
SWIFT No. : SBININBB202
PIN Code : 392 001

24-11-2021

To,
GUJARAT POLLUTION CONTROL BOARD
THE CHAIRMAN
GUJ POLLUTION CONTROL BOARD PARYAVARAN BHAVAN GANDHINAGAR

DEAR SIR(S),

Guarantee Number	:	0033921BG0000022
Date of Issue	:	24-11-2021
Guarantee Amount	:	INR 2,000,000.00
Date of Expiry	:	31-12-2022
Date of Claim	:	31-12-2023
Applicant Name	:	HINDALCO BIRLA COPPER
E Stamp Certificate No.	:	
E Stamp Issuance Date & Time	:	
State of Execution	:	
Stamp Duty Type/Article No.	:	
Bank Guarantee Amount	:	INR 2,000,000.00
Amount of Stamp duty Paid	:	0.00
Issuing Bank Branch	:	
Bank Guarantee Beneficiary	:	GUJARAT POLLUTION CONTROL BOARD

We confirm having Issued / Extended the captioned Bank Guarantee in your favour on behalf of our above named Constituent and the same signed by the officers of the Bank.

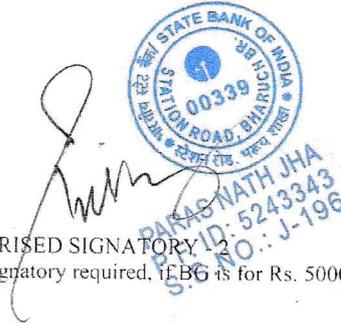
YOURS FAITHFULLY,

AUTHORISED SIGNATORY - I

સુનિલ વ.
SUNIL V.
(AS-6468)

*AUTHORISED SIGNATORY - 2

(*2nd signatory required, if BG is for Rs. 50000/- and above)



The beneficiaries are advised in their own interest to verify the genuineness of the Guarantee with the BG issuing Branch and also verify that Bank Guarantee for Rs.50000/- (Rupees Fifty Thousand Only) & above is signed by two authorized officials of

Nov 24, 2021 5:03 PM

To,
GUJARAT POLLUTION CONTROL BOARD
 THE CHAIRMAN
 GUJARAT POLLUTION CONTROL BOARD
 PARYAVARAN BHAVAN
 GANDHINAGAR

GUARANTEE AGREEMENT

In consideration of the Chairman, Gujarat Pollution Control Board, Gandhinagar (hereinafter

referred to as "the Board") having agreed to grant **HINDALCO INDUSTRIES LTD.**

(Unit-

Birla Copper) for their unit located at **Po-Dahej, Dist-Bharuch, Gujarat, Pin-392130** of the Gujarat State (hereinafter referred to as "Company/ Unit") time for the due

compliance of consent conditions/ directions for providing adequate and satisfactory pollution control devices as suggested/ stipulated vide their letter bearing No. GPCB/BRCH-B/CCA-310(20)/ID:15178 dated 16.11.2021 of the Board and as required under the provisions of the Hazardous Waste (Management & Transboundary Movement) Rules-2016, and/or Environment (Protection) Act, 1986 on production of a Bank Guarantee for **INR. 20,00,000 /- (Rupees Twenty Lacs only).**

1. We, **STATE BANK OF INDIA** (hereinafter referred to as the Bank) at the request of the said, **M/s. HINDALCO INDUSTRIES LTD. (Unit-Birla Copper)**, do hereby undertake to pay to the Board an amount not exceeding **INR. 20,00,000/- (Rupees Twenty Lacs only)** against any noncompliance of consent conditions/ directions or damages etc. caused to the environment by reason of any breach of provisions of the said Acts, Notices, letters, instructions etc. by the said Company/Unit/Local body.
2. We, **STATE BANK OF INDIA** do hereby undertake to pay the amount due and payable under this guarantee without any demur merely on a demand from the Board that the amount claimed is due for the reason of non-fulfilment of undertaking, non-compliance of directions/notice/letter/instruction issued by the Board / violation of provisions of any of the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee shall be restricted to an amount not exceeding **INR. 20,00,000/- (Rupees Twenty Lacs only).**



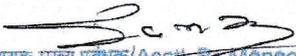
3. We undertake to pay to the Board any money on demand not withstanding any dispute or disputes raised by the said Company/Unit in any suit or proceedings pending before any Court or Tribunal or Board against the Board relating thereto, our liability under this present being absolute and irrevocable.
4. The payment so made by us under this agreement shall be valid discharge of our liability and Company/ Unit shall have no claim against us in making such payment.
5. We, **STATE BANK OF INDIA** further agree that the guarantee herein contained shall remain in force and effect during the period that would be taken for the performance of the undertaking /notice/letter etc. and that it shall continue to be enforceable till all the dues of Government/Board under or by virtue of said undertaking/notice/letter etc. have been fully paid and it has claimed satisfied or discharged or till Government/ Board certifies that the terms and conditions of the Directions/Undertaking /Notice /letter/any provisions of relevant law have been fully and properly carried out and complied by the said Company/Unit and accordingly discharges this guarantee. Unless the demand or a claim under this guarantee is made on us in writing on or before date **31-DEC-2022**. We shall be discharged from all liability under this guarantee thereafter.
6. We, **STATE BANK OF INDIA** further agree with the Board that the Board shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the term and condition of the said undertaking/notice/letter etc. or to extend time of compliance by the said company/ unit from time to time or to postpone for any time or from time to time any of the powers exercisable by the Board against the said Company/Unit and to forbear or enforce any of the terms and conditions relating to the said undertaking/notice/letter etc. and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said Company/Unit or for any forbearance, action, commission on the part of the Board or any indulgence by the Board to The Company/Unit or by any of such matter or thing whatsoever which under the law relating to sureties would but for this provision, have effect of no relieving us.
7. The Guarantee will not be discharged due to the change in the constitution of the Bank or the Company /Unit constitution of the Bank or the Company/Unit.
8. We, **STATE BANK OF INDIA** undertake not to revoke this guarantee during its currency except with the previous consent of the Board in writing.
9. Notwithstanding what has been stated above, our liability under this guarantee is restricted to **INR. 20,00,000/- (Rupees Twenty Lacs only)**. Our guarantee shall remain in force until Dt. **31-DEC-2022** unless a demand or claim under this guarantee is made on us in writing on or before Dt. **31-DEC-2022** all your rights under this guarantee shall be forfeited and we shall be released and discharged from all liabilities under this guarantee thereafter.

Notwithstanding anything contained hereinabove:



- Our liability under this guarantee is restricted to **INR 20,00,000/- (Rs. Twenty Lacs Only)**
- This guarantee shall remain valid up to **Dt. 31-DEC-2022** and
- We are liable to pay the guaranteed amount or any part thereof under this guarantee only and only if you serve upon us a written claim or demand on or before **Dt. 31-DEC-2022**, if no such claim is received by us on or before **Dt. 31-DEC-2022**, all your rights under this guarantee shall be forfeited and we shall be relieved and discharged from all liabilities there under. All claims under this guarantee will be payable at Baruch. This guarantee will be returned to us as soon as the purpose for which it is issued is fulfilled.

कृते भारतीय स्टेट बैंक / FOR STATE BANK OF INDIA


सहायक मुख्य प्रबंधक/Assistant Manager
स्टेशन रोड, ~~भारुच~~ शाखा; / Station Road, Bharuch (00229)



24 NOV 2021

On site emergency plan of Hindalco, Dahej

Hindalco Industries Ltd. (Birla Copper Division)

Near Lakhigam, Dahej, Gujarat-392130

On-Site Emergency Plan

(September-2020)

**Section 7A (2) & 41(B) of the Factories
Act 1948 and Rules 68-J (12)**

-: Prepared by: -

ECO SAFE CONSULTANT (INDUSTRIAL SAFETY &
HEALTH SERVICES)
C – 212, SUPATH II, NEAR OLD VADAJ BUS STNAD,
ASHRAM ROAD, VADAJ, AHMEDABAD – 380013.
EMAIL ID ecosafeconsultant339@gmail.com
PHONE – 8320307314, 9428405913

M/s. Eco Safe Consultant (Industrial Safety & Health Services), Ahmedabad
Competent Person Certificate Services and Industrial Safety & Health Training
Institute Recognized by Directorate of Industrial Safety & Health Department,
Government of Gujarat, Ahmedabad

On site emergency plan of Hindalco, Dahej

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Government of Gujarat, Ahmedabad**

On site emergency plan of Hindalco, Dahej

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On site emergency plan of Hindalco, Dahej

Preface

To establish measures, to prevent and control hazards and risks, new strategies and solutions need to be developed and applied both for well-known hazards and risks such as those arising from dangerous substances, machineries, tools, manual handling as well as to emerging issues. The development of an appropriate response to these issues should rely on and make use of the collective body of knowledge, experience and good practice in this area. It is essential to provide education to raise awareness and preparedness on emergency issues to all concern peoples; including management, supervisors, workers and contractors persons.

The guideline for preparation of onsite emergency plan is issued by Director Industrial Safety and Health, Gujarat State. The present on site emergency plan is prepared as per above guideline.

This emergency plan has been developed by a qualified, experience & competent person. Further, it is prepared in conformity with the State, National and International norms, codes, standards and guidelines on the subject. Further, it has been prepared to meet statutory requirement also. However, this document is not deemed to be any warranty, undertaking or certification.

Training plays a key role in developing attitudes, skills, awareness and preparedness amongst the persons. Further, mock-drills / rehearsal will create the confidence amongst them to tackle the emergency situation. It is suggested to circulate or distribute this document to concerned persons / operatives etc. They are to be insisted to go through and offer their suggestions for up-dating during the revision edition.

On site emergency plan of Hindalco, Dahej

The management of M/s. Hindalco Industries Ltd. located at Near Lakhigam, Dahej, Gujarat-392130 has entrusted us for the task of preparing on-site emergency plan for their existing work. Accordingly we have prepared on-site emergency plan for any emergency emerging out of storage, use, handling and transport of hazardous chemicals used in the plant area.

This is the management's pursuance regarding hazards and measures to be taken in case of any emergency while operating the plant.

We have tried fully to prepare the plan as per the data provided by the management. We express our thanks to all senior management executives, plant head and others from Hindalco Industries Ltd., Dahej for extending their cooperation. We think the plan will be useful to management in combating chemical emergency.

For, Eco Safe Consultant


Authorised Signatory



On site emergency plan of Hindalco, Dahej

CHAPTER - 1

PART - I

SCHEDULE 11 OF GFR / 8A OF MSIHC RULES

1.	Name and Address of the persons furnishing the information	:	Factory: Hindalco Industries Ltd. Mr. K N Bhandari Director 5-New power house road, Sector -7, Jodhpur – 342003
2.	Key Personnel of the organization and responsibilities assigned to them in case of an emergency	:	As per Annexure -14, 15, 16, 17, 18, 29. Chapter – 4 & 6
3.	Outside organizations if involved in mutual aid during On-site emergency	:	1. Gujarat Chemical Port & Terminal Company Limited 2. BASF India Limited 3. Reliance Industries Limited
	(a) Type of accidents	:	Fire, Explosion, Spillage, Toxic release or Bursting of Vessel
	(b) Responsibility assigned	:	As per Annexure -21, 22, 23 Chapter – 4 & 6
4.	Details of liaison arrangement between the organizations	:	As per Chapter – 4
5.	Information on the preliminary hazard analysis	:	As per Chapter – 7
	(a) Type of accidents	:	As per Chapter – 7

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Government of Gujarat, Ahmedabad

On site emergency plan of Hindalco, Dahej

	(b) System elements or events that can lead to a major accident	:	As per Chapter – 7
	(c) Hazards	:	As per Chapter – 7
	(d) Safety relevant components	:	As per Chapter – 6
6.	Details about the site	:	
	(a) Location of dangerous substances	:	As per Chapter – 6, Annexure – 1,4
	(b) Seat of key personnel	:	Plant offices & administration building
	(c) Emergency Control Centre	:	As per Annexure – 20
7.	Description of hazardous chemicals at plant site	:	Furnace Oil, Isopropyl Alcohol(IPA), Diesel, Sulphuric Acid, Ammonia, Phosphoric Acid, Hydrochloric Acid, RLNG, Liquid Oxygen
	(a) Chemicals (quantities and toxicological data)	:	As per Annexure – 4 & 5
	(b) Transformation if any which could occur	:	As per Chapter – 6 & 7
8.	Likely dangers to the plant	:	Refer Chapter – 7
9.	Enumerate effects of	:	
	(a) stress and strain caused during normal operations	:	As per Chapter – 7
	(b) Fire and explosion inside the plant and effect if any of fire and explosion outside	:	As per Annexure – 10, 11, 12
10	Details regarding	:	
	(i) Warning, alarm and safety and	:	As per Annexure – 26

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On site emergency plan of Hindalco, Dahej

	security systems	:	
	(ii) Alarm and hazard control plans in line with disaster control and hazard control planning, ensuring necessary technical and organizational precautions	:	As per Chapter- 7
	(iii) Reliable measuring instruments, control units and servicing of such equipment	:	Periodically Calibration of Equipments
	(iv) Precautions in designing of the foundation and loadbearing parts of the building	:	Stability Certificate obtained
	(v) Continuous surveillance of operations	:	Maintenance and inspection
	(vi) Maintenance and repair work according to the generally recognized rules of good engineering practices	:	Yes
11.	Details of communication facilities available during emergency and those required for an offsite emergency	:	As per Chapter – 5
12.	Details of firefighting and other facilities available and those required for an offsite emergency	:	As per Annexure – 21
13.	Details of first aid and hospital services available and its adequacy	:	As per Annexure – 22

Hindalco Industries LTD.**Unit: Birla Copper, Dahej****Subject: Upliftment Activities Status in Plant**

Birla Copper, Hindalco's copper unit, is located at Dahej in the Bharuch district of Gujarat. This is one of the largest single-location copper smelters in the world with integrated port facilities. Dahej Harbor and Infrastructure Limited (DHIL) is strategically located to cater to the logistics and transportation needs of its customers. The copper unit at Dahej comprises copper smelters, backed by a captive power plant, oxygen plants, by-products plants, utilities and a captive jetty. There is also a precious metals recovery plant at Dahej, which produces gold, silver and selenium.

The Copper Unit of Hindalco Industries LTD, Birla Copper, Dahej was commissioned in 1998 with Smelter, Refinery and its auxiliaries, and subsequently over the period the plant was expanded. Since it's been two decades since it's commissioning, the Birla Copper Team decided to take a progressive decision of going for a plant upgradation project in the year 2019. For this a special team was formulated.

The team conducted several rounds of visual and structural inspection and third-party assistance was also taken which resulted in the identification of critical jobs.

For the said job we have taken a block of Rs 475 Crore out of which we have spent Rs 186 crores till now and we plan to spend the balance amount in next three financial years.

1. Currently, 48 Upliftment activities are going on across the plant.

Location	Nature Of Work
SM 3 104 CV01	Retrofitting Work @ CV01 belt conveyor Structure
SM 3 104 CV09/04	Retrofitting Work @ CV09 belt conveyor Structure
SM 3 Scrubber	Central Scrubber Platform and Chimney Structure strengthening work
SM-3 JCW Cooling tower	Platform Replacement work @ JCW Cooling tower area
SM-3 Ventilation Fan	HY9 Ventilation Fan platform replacement
Over Head Tank	OHT Staircase Replacement work
SAP-III GCP	Staircase Replacement -GCP Area
SAP-3 W/Acid	Platform members and grating replacement work
Ref-3	Cathode Storage shed replacement work
Ref-3	Slime Area Platform and Approach staircase and structural retrofitting work
CPP-3 BCN 06	Trestle and Gallery Structure strengthening work
CPP-3 Area Painting work	Painting work-CPP 3
CPP3 Insulation work	CPP-3 Area Pipe/Equipment Insulation work
Coal area Conv.	Conveyor Platform and grating replacement work
CPP3 JNT-3	Structure strengthening work

CPP-1 Conv. 3A/3B Take-up pulley	Take up pulley structure Strengthening work
CPP 1 JNT-4	Structure strengthening work
CPP 1&2 Pipe Rack	Pipe Rack Strengthening Work
CPP-1 Boiler	CPP-1 Boiler Dismantling work
ALF3 Plant	ALF3 Plant Dismantling
WTP /ETP	Propane tank dismantling work
CCR-2 & PMR Painting	Painting work @ PMR and CCR Area
Jetty	Retrofitting Work @ belt conveyors
Jetty	Painting work at belt conveyor and Pipe Rack
SM-1 34- Boiler	Hand Rail, Grating Replacement and platform member replacement
SM-1 Pipe Rack	Structure strengthening work
SM-1 Scrubber Area	Scrubber Approach staircase and platform replacement work
SM1 Converter	Hand Rail, Grating Replacement and platform member replacement
SM-1 31- Boiler	Hand Rail, Grating Replacement and platform member replacement
Fabrication Yard	Structure Fabrication work
SAP-1 Pipe Rack	Structure strengthening work
Common Pipe Rack	Common Pipe Rack Painting and Insulation Work
WTP/ RO Plant	Structure strengthening work
WTP-WTP 2	Pipe line support strengthening work
WTP 2 & RO	Buffing and Painting & Scaffolding
SM-3 Off Gas Area	Cable Dressing
SM-1 Scrubber Area	Cable Dressing
SM-1 Convertor Area	Cable Dressing
MRS-1	CT Replacement
CPP-1	IPF Flooring
CPP-3	Di-electric coating
Coal yard	Cable Dressing
WTP/ETP	Cable Dressing
PMR	Cable Dressing
CCR-1	Di-electric coating
CCR-1	UPS Room Renovation
Refinery-1	Camera Fixing
Jetty	Panel Painting

2. Cost Incurred/To be incurred on upliftment project

	Block	Cashflow FY20	Cashflow FY21	Cash Flow (Rs. in Crs)		
				FY22 LE	FY23 P&B	FY24 Proj
Mechanical	325.07	14.1	55	116	128	31
Civil	52.4	4.4	4.5	17	17	2
Electrical	97.06	0	10.2	31	38	8
Total Upliftment Cost	475	19	70	164	182	41