



The Additional PCCF,
Ministry of Environment, Forests & Climate Change
Regional office (West Central Zone),
Ground Floor, East Wing,
"New Secretary Building"
Civil lines, Nagpur - 440001

21/11/2019

Subject: Compliance Status of Environment Clearance No. J-11015/406/2006-IA.II(M) conditions for Dhangarwadi Bauxite Mines (M. L. Area 41.80 Ha.).

Dear Sir,

We have been granted Environment Clearance to our **Dhangarwadi Bauxite Mines** on 13th of April 2007 vide clearance **No J-11015/406/2006-IA.II(M)**.

We are herewith submitting the compliance status against the conditions laid down in the Environment Clearance for period of **April'19 to September'19** along with environment monitoring reports.

Hope you will please find the above in order.

Thanking you,

Yours very truly,

Uday V. Pawar
Head – West Coast Mines
Hindalco Industries Limited

Encl. A/a

Copy to:

1. The Member Secretary,
Central Pollution Control Board,
Parivesh Bhavan, East Arjun Nagar,
DELHI - 110032

2. The Regional Officer
Maharashtra Pollution Control Board
Udyog Bhawan, KOLHAPUR.

Hindalco Industries Limited

Durgmanwadi Mines: PO Radhanagari - 416 212, Dist. Kolhapur, Maharashtra, T: +91 02321 202072, 202178, 133,
Kolhapur Office: T:+91 0231 2661458, 2666621, 2021461, 2021462

Registered Office: Ahura Centre, 1st Floor, B-Wing, Mahakali Caves Road, Andheri (East), Mumbai - 400 093, India
T: +91 22 6691 7000 | Fax: +91 22 6691 7001 | E: hindalco@adityabirla.com | W: www.hindalco.com | Corporate ID No.: L27020MH1958PLC011238

ENVIRONMENT CLEARANCE COMPLIANCE STATUS

ENVIRONMENT CLEARANCE No. J-11015/406/2006-IA.II(M) dt. 13/04/2007

DHANGARWADI BAUXITE MINES

Sr. No.	CONDITIONS	COMPLIANCE
A) Specific Conditions :-		
i)	Top soil to be stacked properly with proper slope with adequate safeguards and to be backfilled for reclamation and rehabilitation of mined out area.	The top soil generated during overburden removal has been backfilled for reclamation and rehabilitation of mined out area.
ii)	Overburden shall be stacked at earmarked dump site(s) only and shall not be kept active for long period. The maximum height of the dump shall not exceed 30 m, each stage shall preferably be of 10 m and over all slope of the dump shall not exceed 28°. The mine pit area to be reclaimed by backfilling the OB in a phased manner. The OB dumps to be scientifically vegetated with suitable native species to prevent erosion and surface run off. Monitoring and management of rehabilitated areas to be continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests on six monthly basis.	There is no overburden dumps exist today. As of now, OB generated during mining operation is being used for backfilling of mined out area simultaneously. Backfilled area has been scientifically vegetated with indigenous species and native shrubs. Monitoring and management of rehabilitated areas is being done regularly so that vegetation becomes self-sustaining. Compliance status is being submitted on six monthly.
iii)	Garland drains to be constructed to arrest silt and sediment flows from watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly. Garland drain (size, gradient and length) shall be constructed for both mine pit and for waste dump and sump capacity shall be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.	Garland drains have been provided to arrest the silt and sediment flows from the mine area, roads, green belt development etc. The flow from the settling tanks is then channelized through check dams. Drains and check dams are de-silted and maintained properly. Garland drains have been constructed for mine pit. Sumps of sufficient capacity are provided. Sump provides adequate retention period to allow settling of silt material. Sedimentation pits have been constructed at the corners of the garland drains and desilted at regular intervals.

iv)	Drilling and blasting shall be by using dust extractors/wet drilling.	Drilling and blasting is being carried out by using mist water jet (wet drilling).
v)	Plantation to be raised in an area of 22.32 ha. including green belt of adequate width by planting the native species around the ML area, roads, OB dump sites etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 2500 plants per ha.	<p>The lease area has natural green belt with indigenous species which is undisturbed and maintained.</p> <p>On slope of backfilled area, plantation of local species "Karvy" to control slope stability and soil erosion has been carried out with the help of expertise / Government agencies.</p> <p>A nursery has been developed for indigenous and local species (around 4000) for plantation in mined out areas.</p> <p>The plantation is carried out every year as per plan. Till date .49,150 saplings have been planted & restored about 24.0 Ha area:</p> <p>During the year 2019-20, 12,000 saplings have been planted to cover 6.0 Ha.</p>
vi)	Implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	<p>Water harvesting pond has been developed in the mined out areas as per the condition given in the NOC of CGWA.</p> <p>Drip irrigation is in practice as conservation measures to save the water.</p>
vii)	Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground Water Authority and Regional Director Central Ground Water Board.	<p>The ground water quality is monitored on quarterly basis.</p> <p>The mining is carried out to a depth of 7 to 10 Mts from the surface. There is no interaction with the ground water and hence there is no disturbance to the ground water.</p>
viii)	Prior permission from the competent authority to be obtained for drawl of ground water, if any.	Permission for ground water withdrawal has been obtained from CGWA.
ix)	Vehicular emissions to be kept under control and regularly monitored. Measures to be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles	<p>There is a system to check the PUC certificates of all hired trucks regularly.</p> <p>Timely maintenance of all heavy</p>

	should be covered with a tarpaulin and shall not be over loaded.	equipments is carried out. All transport vehicles are covered with tarpaulin. The vehicles are weighed within the mines. All the vehicles are carrying bauxite as per RLW.
x)	At the end of the mining, the void shall be used as water body for water conservation and recharging of the ground water.	At the end of the mining, the void of adequate size will be used as water body for water conservation and recharging of the ground water.
xi)	A Final Mine Closure Plan, alongwith details of Corpus Fund, should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	Mine is still in operation. Final closure plan needs to be approved by Indian Bureau of Mines. Final Mine closure plan require to be submitted to IBM as per their guidelines and Rule 24 of MCDR, two years prior to the closure of the mine. The copy of the same will be submitted to MoEF.

B) General Conditions :-

i.	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment & Forests	There is no change in the mining technology and in the scope of working.
ii.	No change in the calendar plan including excavation, quantum of mineral bauxite & waste shall be made	The production is restricted to the approved quantity.
iii.	Conservation measures for protection of flora & fauna in the core & buffer zone shall be drawn up in consultation with the local forest and wildlife department.	As a part of conservation measures for protection of flora and fauna, mined out area is scientifically afforested. For this we procure manure, vermi compost to improve the condition of plantation base. We had engaged experts to implement afforestation activity. Care has been taken to plant mostly local flora along with some exotic species. Further core area is fenced with parapet wall, barbed wire and thus natural vegetation is protected. Mining is being done only in day light. Awareness programme is being conducted in nearby villages.
iv.	Four ambient air quality monitoring stations shall be established in the core zone & buffer zone for RPM, SPM, SO ₂ , NO _x monitoring. Location of the stations	Ambient air quality stations have been established in the core and buffer area.

	should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	
v.	Regular submission of data on ambient air quality (RPM, SPM, SO ₂ ,NO _x) to the Ministry including its Regional Office and the State Pollution Control Board once in six months.	The monitoring is carried out as per the schedule and Data is submitted regularly. Reports are attached.
vi.	Regular control of fugitive dust emissions from all the sources. Water spraying arrangement on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.	Truck mounted mobile water tanker is being used for dust suppression during mining operation and transportation.
vii.	Take measures for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, shall be provided with ear-plugs / muffs.	The noise levels in work environment are within the standard limits. All the workers engaged in operations of HEMM are provided with ear-plugs / muffs.
viii.	Proper collection, treatment of industrial waste water to conform to the standards prescribed under GSR 422 (E) dt.19 th May, 1993 and 31 st December, 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.	Not Applicable, because there is no industrial waste water as there is no mineral processing is carried out.
ix.	Provide adequate training and information on safety & health aspects & provide protective respiratory devices to personnel working in dusty areas	Regular training to employees on Safety and Health aspects is provided and all the workers engaged in operations are provided dust masks.
x.	Undertake periodic Occupational health surveillance program of the workers to observe any contractions due to exposure to dust and take corrective measures, if needed.	The health surveillance is done once in a year for all employees and there are no cases of occupational health hazards.
xi.	Set-up separate environmental management cell with suitable qualified personnel	A full-fledged Environment cell operates at the unit level and qualified personnel are employed.
xii.	Inform the Regional Office located at Bhopal regarding date of financial	Not applicable, as this is an operating

	closures and final approval of the project by the concerned authorities and the date of start of land development work.	mine.																								
xiii.	The funds earmarked for environmental protection measures to be kept in separate account and should not be diverted for other purpose. Yearwise expenditure shall be reported to the Ministry and its Regional Office.	<p>The separate funds have been allocated for implementation of environmental protection measures along with item-wise breakup such as furnished below (from Apr-19 to Sep-19).</p> <table border="1"> <thead> <tr> <th>SO. NO.</th> <th>Shop Order Description</th> <th>Expenditure for the year 2019-20 (Rs.) {Upto Sep-19}</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Nurssery & Plantation (5117)</td> <td>5,63,972.0</td> </tr> <tr> <td>2</td> <td>After care (5118)</td> <td>0.0</td> </tr> <tr> <td>3</td> <td>Environment Monitoring (5119)</td> <td>2,42,500.0</td> </tr> <tr> <td>4</td> <td>Dust suppression (5120)</td> <td>1,99,588.0</td> </tr> <tr> <td>5</td> <td>Statutory Compliance (5121)</td> <td>13,366.0</td> </tr> <tr> <td>6</td> <td>Environment Others</td> <td>7,900.0</td> </tr> <tr> <td colspan="2">TOTAL</td> <td>10,27,326.0</td> </tr> </tbody> </table>	SO. NO.	Shop Order Description	Expenditure for the year 2019-20 (Rs.) {Upto Sep-19}	1	Nurssery & Plantation (5117)	5,63,972.0	2	After care (5118)	0.0	3	Environment Monitoring (5119)	2,42,500.0	4	Dust suppression (5120)	1,99,588.0	5	Statutory Compliance (5121)	13,366.0	6	Environment Others	7,900.0	TOTAL		10,27,326.0
SO. NO.	Shop Order Description	Expenditure for the year 2019-20 (Rs.) {Upto Sep-19}																								
1	Nurssery & Plantation (5117)	5,63,972.0																								
2	After care (5118)	0.0																								
3	Environment Monitoring (5119)	2,42,500.0																								
4	Dust suppression (5120)	1,99,588.0																								
5	Statutory Compliance (5121)	13,366.0																								
6	Environment Others	7,900.0																								
TOTAL		10,27,326.0																								
xiv.	Inform the Regional Office located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Not Applicable, as this is an operating mine.																								
xv.	The Regional Office of this Ministry located at Bhopal should monitor compliance of the stipulated conditions. The project authority should extend full co-operation to the officer(s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	Agreed and Noted.																								
xvi.	Copy of the clearance letter be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.	Complied.																								
xvii.	State Pollution Control Board to display a copy of the clearance letter at the																									

	Regional Office, District Industry Centre and Collector's office / Tehsildar's Office for 30 days.	Complied.
xviii.	Advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same shall be forwarded to the Regional Office of this Ministry located at Bhopal.	Complied.

DHANGARWADI BAUXITE MINE

**TAHSIL: SHAHUWADI, DISTRICT: KOLHAPUR,
STATE: MAHARASHTRA**

OF

M/s HINDALCO INDUSTRIES LTD.

ENVIRONMENTAL QUALITY MONITORING REPORT

SEASON - SUMMER 2019

MARCH, APRIL, MAY

PREPARED BY



EQUINOX ENVIRONMENTS (I) PVT. LTD.,

**ENVIRONMENTAL; CIVIL & CHEMICAL ENGINEERS, CONSULTANTS & ANALYSTS,
KOLHAPUR (MS)**

E-mail: lab@equinoxenvi.com, enquiry@equinoxenvi.com

An ISO 9001:2015 & QCI NABET ACCREDITED ORGANIZATION



2019 - 2020

Boundary Piller	Latitude	Longitude
BP-1	16°54'23.97936"	73°51'06.58578"
BP-2	16°54'25.58504"	73°51'08.77438"
BP-3	16°54'26.48194"	73°50'57.33252"
BP-4	16°54'32.10897"	73°50'39.10413"
BP-5	16°54'33.71609"	73°50'28.68465"
BP-6	16°54'17.85558"	73°50'23.13450"
BP-7	16°54'18.53489"	73°50'52.36531"
BP-8	16°54'17.86289"	73°50'52.38834"
BP-9	16°54'18.85568"	73°51'00.07188"

S.No	Village	Distance in (km)	Direction	Population
1	Dhangarwadi	1.00 km	North	371
2	Pakotewadi	4.00 km	East	462
3	Ainwadli	4.20 km	East	881
4	Jajali	4.5 km	North	537
5	Mahalsade	2.50 km	South	686
6	Kenarsade	2.00 km	North	1175

INDEX

LEASE BOUNDARY

CANAL

ROADS

CONTOURS

FOREST

AGRICULTURE LAND

RIVER

10 KM RADIUS

ENVIRONMENT MONITORING STATIONS

AIR A6

NOISE N7

WATER W8

SOIL S1

THIS IS TO CERTIFY THAT THE INFORMATION CONTAINED IN THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE.

TECHNICAL QUALIFIED PERSON

DHANGARWADI BAUXITE MINES
 Village, Dhargarwadi, Taluk, Dhargarwadi, Dist., Gadchiroli, Maharashtra

OWNER: M/S HINDALCO INDUSTRIES LIMITED

PURPOSE: KEY PLAN

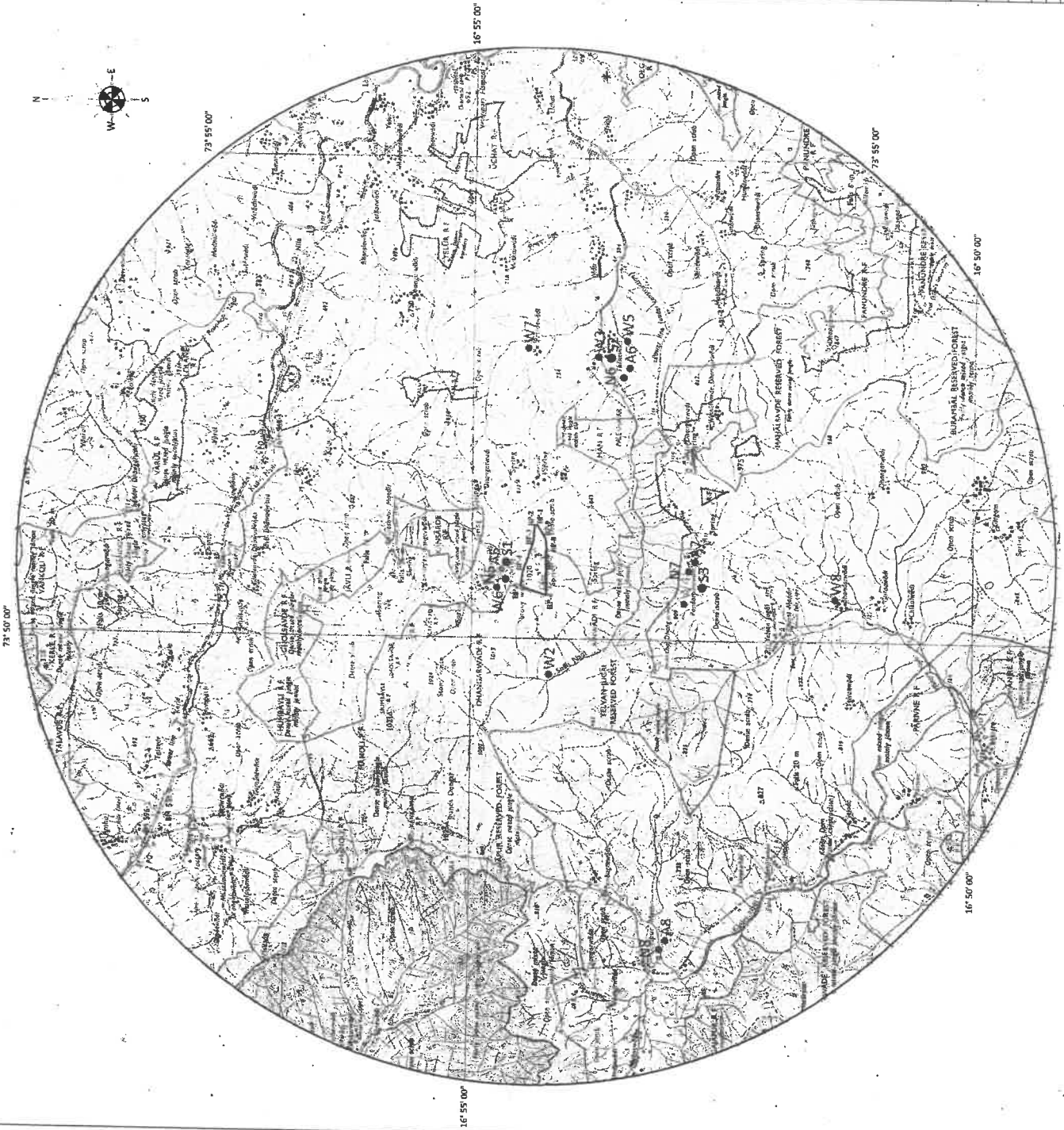
MIN-1097/C.R.7321/IND-9 Dtd:-28/12/2008 TOPOSHEET NO. 47N/13
 AREA-41.80 Ha.

SCALE: 1:50000

PLATE NO. - 3

MINE SURVEYOR

MINE MANAGER





Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Ambient Air Quality Monitoring Report

Report No-	GESEC/PRO/2019-20/06/1-24	Date of Report	10/06/2019
Name of Client	Equinox Environments (I) Pvt-Ltd-, Kolhapur, Maharashtra		
Project Name & Address	M/s. Hindalco Industries Limited (Dhangarwadi Bauxite Mine) A/P. Dhangarwadi village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra		
Sample Collected and Analyzed by	Green EnviroSAFE Engineers & Consultant Pvt- Ltd, Pune, Maharashtra		
Name Of Instrument & Calibration Details	Make	Date of calibration	Calibration Due Date
Ambient Fine Dust	Instrumex	08/02/2019	07/02/2020
Calibration Certificate No- IPM-FDS/18-19/368-1			

NAME OF LOCATION- Station: A1, CORE ZONE

Sampling Date	Date of Sample Registration	Parameter	PM10 µg/m3	PM2-5 µg/m3	SO2 µg/m3	NOX µg/m3	CO mg/m3	Hydro-Carbon µg/m3
		Limit	100 (µg/m3)	60 (µg/m3)	80 (µg/m3)	80 (µg/m3)	04 (mg/m3)	N.S (µg/m3)
Analysis Method			IS: 5181 (Part-23) 2006	IS: 5181 (Part-23) 2006	Modified West & Gaeke Method	Jacob & Hocheiser's Method	NDIR Method	GC Method
March - 2019								
04-03-2019	11.03.2019	Week-2	50.4	15.1	17.2	24.6	0.06	1.2
05-03-2019	11.03.2019	Week-2	63.7	22.4	18.8	28.9	0.07	1.1
11-03-2019	18.03.2019	Week-3	58.4	19.0	17.8	26.8	0.07	1.6
12-03-2019	18.03.2019	Week-3	68.9	22.1	19.8	26.5	0.08	1.1
18-03-2019	25.03.2019	Week-4	50.7	15.6	18.3	25.9	0.09	1.4
19-03-2019	25.03.2019	Week-4	63.7	20.7	20.0	27.4	0.08	1.1
25-03-2019	01.04.2019	Week-5	62.4	19.1	19.2	25.2	0.06	1.3
26-03-2019	01.04.2019	Week-5	55.2	16.8	19.9	23.4	0.08	1.1
April - 2019								
01-04-2019	08.04.2019	Week-1	58.0	18.2	17.8	26.0	0.06	1.0
02-04-2019	08.04.2019	Week-1	57.1	16.7	18.3	25.8	0.10	1.6
08-04-2019	15.04.2019	Week-2	63.7	21.1	18.4	24.0	0.08	1.2
09-04-2019	15.04.2019	Week-2	54.2	15.9	17.6	23.1	0.07	1.4
15-04-2019	22.04.2019	Week-3	56.6	17.5	18.6	26.2	0.08	1.3
16-04-2019	22.04.2019	Week-3	70.1	22.4	19.2	23.4	0.12	1.6
22-04-2019	29.04.2019	Week-4	70.0	20.9	19.7	27.1	0.06	1.2
23-04-2019	29.04.2019	Week-4	65.8	20.0	20.0	24.4	0.09	1.1
May - 2019								
06-05-2019	13.05.2019	Week-2	62.8	19.8	17.5	27.6	0.09	1.4
07-05-2019	13.05.2019	Week-2	65.4	20.4	18.0	23.5	0.08	1.3
13-05-2019	20.05.2019	Week-3	70.0	23.1	14.7	26.9	0.10	1.0
14-05-2019	20.05.2019	Week-3	53.4	16.7	13.5	24.2	0.08	1.4
20-05-2019	27.05.2019	Week-4	67.3	22.4	20.0	26.3	0.09	1.0
21-05-2019	27.05.2019	Week-4	65.9	21.5	19.8	24.3	0.04	1.1
27-05-2019	31.05.2019	Week-5	46.2	13.7	17.4	28.0	0.09	1.8
28-05-2019	31.05.2019	Week-5	60.8	18.1	18.1	25.1	0.10	1.2

Remark: All Parameters are within NAAQS Standards.

Lab Chemist



Authorized Signatory

**GREEN ENVIROSAFE**

Engineers & Consultant Pvt Ltd.

Survey No-1405/06, Mayuri Residency, Shop No-16, 2nd Floor, Sanaswadi, Tal-Shirur, Pune-412208.

Mob-+ 9545084620 | E-mail:gesec12@gmail.com | www.greenenvirosafe.co.in

CIN No. : U74900PN2013PTC149666

Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Ambient Air Quality Monitoring Report

Report No-	GESEC/PRO/2019-20/06/25-48		Date of Report	10/06/2019
Name of Client	Equinox Environments (I) Pvt- Ltd-, Kolhapur, Maharashtra			
Project Name & Address	M/s. Hindalco Industries Limited (Dhangarwadi Bauxite Mine) A/P. Dhangarwadi village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra			
Sample Collected and Analyzed by	Green EnviroSafe Engineers & Consultant Pvt- Ltd, Pune, Maharashtra-			
Name Of Instrument & Calibration Details	Make	Date of calibration	Calibration Due Date	Calibration Certificate No-
Ambient Fine Dust	Instrumex	08/02/2019	07/02/2020	IPM-FDS/18-19/368-2

NAME OF LOCATION- Station: A2, NEAR MINES OFFICE

Sampling Date	Date of Sample Registration	Parameter	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³	Hydro-Carbon µg/m ³
		Limit	100 (µg/m ³)	60 (µg/m ³)	80 (µg/m ³)	80 (µg/m ³)	04 (mg/m ³)	N.S (µg/m ³)
Analysis Method			IS: 5181 (Part-23) 2006	IS: 5181 (Part-23) 2006	(Modified West & Gaeke Method)	(Jacob & Hocheiser's Method)	NDIR Method	GC Method

March - 2019

04-03-2019	11.03.2019	Week-2	50.7	15.3	13.7	17.4	0.07	0.9
05-03-2019	11.03.2019	Week-2	62.5	19.4	15.3	18.2	0.09	0.8
11-03-2019	18.03.2019	Week-3	71.1	21.8	16.4	20.1	0.07	1.0
12-03-2019	18.03.2019	Week-3	67.9	22.1	13.4	18.5	0.06	0.9
18-03-2019	25.03.2019	Week-4	61.3	17.5	14.8	18.8	0.09	1.2
19-03-2019	25.03.2019	Week-4	47.6	13.7	13.2	16.4	0.08	0.8
25-03-2019	01.04.2019	Week-5	65.1	21.0	14.1	19.9	0.08	0.7
26-03-2019	01.04.2019	Week-5	55.7	16.7	14.6	17.2	0.09	0.8


April - 2019

01-04-2019	08.04.2019	Week-1	53.4	15.7	12.1	15.9	0.05	0.7
02-04-2019	08.04.2019	Week-1	66.7	21.4	15.7	19.3	0.07	0.8
08-04-2019	15.04.2019	Week-2	70.1	22.7	12.8	18.0	0.08	0.6
09-04-2019	15.04.2019	Week-2	61.4	19.4	14.5	20.8	0.08	0.7
15-04-2019	22.04.2019	Week-3	58.1	18.3	15.0	17.2	0.03	0.9
16-04-2019	22.04.2019	Week-3	54.8	17.7	16.0	22.0	0.09	0.5
22-04-2019	29.04.2019	Week-4	65.3	20.4	17.3	19.2	0.07	1.0
23-04-2019	29.04.2019	Week-4	64.8	21.4	16.7	20.6	0.06	0.9

May - 2019

06-05-2019	13.05.2019	Week-2	56.4	17.3	13.4	16.2	0.02	0.8
07-05-2019	13.05.2019	Week-2	63.4	16.8	15.6	18.5	0.06	0.9
13-05-2019	20.05.2019	Week-3	60.7	15.3	14.7	16.3	0.09	1.2
14-05-2019	20.05.2019	Week-3	59.7	18.0	16.1	21.5	0.06	0.9
20-05-2019	27.05.2019	Week-4	64.7	17.7	13.2	17.9	0.08	0.8
21-05-2019	27.05.2019	Week-4	70.2	20.5	12.9	15.2	0.06	1.0
27-05-2019	31.05.2019	Week-5	65.5	21.4	16.8	22.0	0.07	1.0
28-05-2019	31.05.2019	Week-5	67.0	18.4	17.0	20.4	0.09	1.2

Remark: All Parameters are within NAAQS Standards.


 Lab Chemist



Authorized Signatory



Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Ambient Air Quality Monitoring Report

Report No-	GESEC/PRO/2019-20/06/19-72	Date of Report	10/06/2019
Name of Client	Equinox Environments (I) Pvt- Ltd-, Kolhapur, Maharashtra		
Project Name & Address	M/s. Hindalco Industries Limited (Dhangarwadi Bauxite Mine) A/P. Dhangarwadi village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra		
Sample Collected and Analyzed by	Green EnviroSAFE Engineers & Consultant Pvt- Ltd, Pune, Maharashtra-		

Name Of Instrument & Calibration Details	Make	Date of calibration	Calibration Due Date	Calibration Certificate No-
Ambient Fine Dust	Instrumex	08/02/2019	07/02/2020	IPM-FDS/18-19/367-1

NAME OF LOCATION- Station: A3, NEAR HAULAGE ROAD

Sampling Date	Date of Sample Registration	Parameter	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³	Hydro-Carbon
		Limit	100 (µg/m ³)	60 (µg/m ³)	80 (µg/m ³)	80 (µg/m ³)	04 (mg/m ³)	N.5 (µg/m ³)
Analysis Method			IS: 5181 (Part-23) 2006	IS: 5181 (Part-23) 2006	(Modified West & Gaeke Method)	(Jacob & Hocheiser's Method)	NDIR Method	GC Method

March - 2019

04-03-2019	11.03.2019	Week-2	56.8	20.4	15.2	18.5	0.09	0.8
05-03-2019	11.03.2019	Week-2	60.4	18.0	14.8	19.4	0.11	0.4
11-03-2019	18.03.2019	Week-3	64.8	15.5	17.2	20.6	0.13	0.7
12-03-2019	18.03.2019	Week-3	58.1	18.8	16.0	20.8	0.12	0.9
18-03-2019	25.03.2019	Week-4	67.7	19.1	14.3	18.1	0.08	0.6
19-03-2019	25.03.2019	Week-4	69.4	16.8	12.8	17.4	0.10	1.0
25-03-2019	01.04.2019	Week-5	59.4	20.0	15.5	21.7	0.11	1.5
26-03-2019	01.04.2019	Week-5	64.6	18.4	13.7	16.8	0.13	1.2

April - 2019

01-04-2019	08.04.2019	Week-1	59.1	18.2	13.0	19.1	0.09	0.9
02-04-2019	08.04.2019	Week-1	62.3	19.0	14.4	18.2	0.09	0.5
08-04-2019	15.04.2019	Week-2	70.4	16.8	12.5	15.0	0.07	0.7
09-04-2019	15.04.2019	Week-2	55.4	15.7	13.6	17.3	0.10	0.6
15-04-2019	22.04.2019	Week-3	60.8	17.2	15.4	18.5	0.09	0.5
16-04-2019	22.04.2019	Week-3	63.4	16.0	14.0	16.5	0.08	0.7
22-04-2019	29.04.2019	Week-4	59.7	18.0	12.8	15.9	0.11	0.8
23-04-2019	29.04.2019	Week-4	62.8	15.5	13.1	27.0	0.10	0.9

May - 2019

06-05-2019	13.05.2019	Week-2	58.1	19.0	18.5	21.3	0.10	0.4
07-05-2019	13.05.2019	Week-2	67.7	16.8	15.6	18.2	0.09	0.6
13-05-2019	20.05.2019	Week-3	69.4	16.8	15.4	20.4	0.08	0.8
14-05-2019	20.05.2019	Week-3	59.4	20.0	14.4	21.6	0.11	0.9
20-05-2019	27.05.2019	Week-4	63.4	18.4	16.2	18.4	0.12	1.0
21-05-2019	27.05.2019	Week-4	60.7	15.7	14.8	19.5	0.10	0.5
27-05-2019	31.05.2019	Week-5	59.7	21.3	13.4	20.1	0.13	0.2
28-05-2019	31.05.2019	Week-5	64.7	20.4	12.4	19.4	0.12	0.8

Remark: All Parameters are within NAAQS Standards.

Lab Chemist



Authorized Signatory

**GREEN ENVIROSAFE**

Engineers & Consultant Pvt Ltd.

Survey No-1405/06, Mayuri Residency, Shop No-16, 2nd Floor, Sanaswadi, Tal-Shirur, Pune-412208.

Mob + 9545084620 | E-mail: gsec12@gmail.com | www.greenenvirosafe.co.in

CIN No. : U74900PN2013PTC149666

Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Ambient Air Quality Monitoring Report

Report No-	GESEC/PRO/2019-20/06/73-96	Date of Report	10/06/2019
Name of Client	Equinox Environments (I) Pvt- Ltd-, Kolhapur, Maharashtra		
Project Name & Address	M/s. Hindalco Industries Limited (Dhangarwadi Bauxite Mine) A/P. Dhangarwadi village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra		
Sample Collected and Analyzed by	Green EnviroSAFE Engineers & Consultant Pvt- Ltd, Pune, Maharashtra-		

Name Of Instrument & Calibration Details	Make	Date of calibration	Calibration Due Date	Calibration Certificate No-
Ambient Fine Dust	Instrumex	08/02/2019	07/02/2020	IPM-FDS/18-19/367-2

NAME OF LOCATION- Station: A4, Near Dump Site

Sampling Date	Date of Sample Registratio	Parameter	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³	Hydro-Carbon µg/m ³
		Limit	100 (µg/m ³)	60 (µg/m ³)	80 (µg/m ³)	80 (µg/m ³)	04 (mg/m ³)	N.S (µg/m ³)
Analysis Method			IS: 5181 (Part-23) 2006	IS: 5181 (Part-23) 2006	(Modified West & Gaeke Method)	(Jacob & Hocheiser's Method)	NDIR Method	GC Method

March - 2019

06-03-2019	11.03.2019	Week-2	68.9	19.4	13.8	19.3	0.13	0.6
07-03-2019	11.03.2019	Week-2	63.1	18.4	15.1	20.4	0.14	0.5
13-03-2019	18.03.2019	Week-3	70.4	19.4	16.7	19.1	0.09	0.9
14-03-2019	18.03.2019	Week-3	68.2	17.2	17.5	18.0	0.10	0.7
20-03-2019	25.03.2019	Week-4	65.7	20.8	18.3	18.4	0.13	1.0
21-03-2019	25.03.2019	Week-4	68.2	17.7	14.8	20.8	0.12	0.8
27-03-2019	01.04.2019	Week-5	60.0	19.4	19.5	21.6	0.09	0.4
28-03-2019	01.04.2019	Week-5	61.5	21.4	16.4	19.4	0.10	0.5

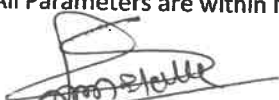
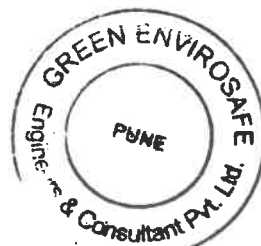
April - 2019

03-04-2019	08.04.2019	Week-1	67.1	21.8	12.4	18.5	0.09	1.0
04-04-2019	08.04.2019	Week-1	63.1	19.4	14.8	19.2	0.10	1.1
10-04-2019	15.04.2019	Week-2	70.4	22.4	13.9	21.6	0.12	0.9
11-04-2019	15.04.2019	Week-2	68.2	18.9	15.1	18.4	0.11	0.7
17-04-2019	22.04.2019	Week-3	65.7	20.0	14.6	20.3	0.08	0.9
18-04-2019	22.04.2019	Week-3	68.2	20.8	15.4	18.4	0.07	0.8
24-04-2019	29.04.2019	Week-4	70.4	19.4	14.2	19.8	0.09	0.7
25-04-2019	29.04.2019	Week-4	69.1	18.2	13.8	20.0	0.10	0.5

May - 2019

08-05-2019	13.05.2019	Week-2	64.8	21.3	14.4	19.2	0.08	0.9
09-05-2019	13.05.2019	Week-2	62.2	19.9	15.0	18.7	0.20	0.8
15-05-2019	20.05.2019	Week-3	68.5	15.8	16.1	18.4	0.8	0.7
16-05-2019	20.05.2019	Week-3	59.9	23.1	14.7	19.9	0.11	0.5
22-05-2019	27.05.2019	Week-4	70.5	18.4	15.3	20.1	0.08	0.6
23-05-2019	27.05.2019	Week-4	67.3	16.4	16.2	20.8	0.07	0.4
29-05-2019	31.05.2019	Week-5	64.9	20.8	14.6	19.0	0.09	0.3
30-05-2019	31.05.2019	Week-5	69.4	22.1	12.8	21.2	0.12	0.5

Remark: All Parameters are within NAAQS Standards.


 Lab Chemist


 Authorized Signatory



Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Ambient Air Quality Monitoring Report

Report No-	GESEC/PRO/2019-20/06/97-120	Date of Report	10/06/2019
Name of Client	Equinox Environments (I) Pvt- Ltd-, Kolhapur, Maharashtra		
Project Name & Address	M/s. Hindalco Industries Limited (Dhangarwadi Bauxite Mine) A/P. Dhangarwadi village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra		
Sample Collected and Analyzed by	Green EnviroSAFE Engineers & Consultant Pvt- Ltd, Pune, Maharashtra-		

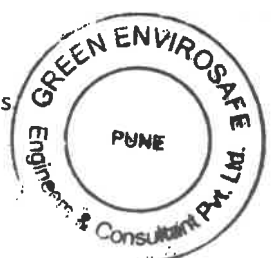
Name Of Instrument & Calibration Details	Make	Date of calibration	Calibration Due Date	Calibration Certificate No-
Ambient Fine Dust	Instrumex	08/02/2019	07/02/2020	IPM-FDS/18-19/368-1

NAME OF LOCATION- Station: A 5, DHANGARWADI VILLAGE

Sampling Date	Date of Sample Registratio	Parameter	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³	Hydro-Carbon N.S (µg/m ³)
Analysis Method			100 (µg/m ³) IS: 5181 (Part-23) 2006	60 (µg/m ³) IS: 5181 (Part-23) 2006	80 (µg/m ³) (Modified West & Gaeke Method)	80 (µg/m ³) (Jacob & Hocheiser's Method)	04 (mg/m ³) NDIR Method	GC Method
March – 2019								
06-03-2019	11.03.2019	Week-2	65.4	15.8	14.1	18.8	0.10	BDL
07-03-2019	11.03.2019	Week-2	61.8	21.8	13.5	19.9	0.12	0.1
13-03-2019	18.03.2019	Week-3	54.2	17.0	16.4	22.0	0.11	0.2
14-03-2019	18.03.2019	Week-3	51.8	16.3	14.5	20.8	0.08	BDL
20-03-2019	25.03.2019	Week-4	53.2	15.2	16.0	18.9	0.07	BDL
21-03-2019	25.03.2019	Week-4	60.0	20.8	13.9	19.3	0.09	BDL
27-03-2019	01.04.2019	Week-5	55.8	15.4	14.2	21.8	0.20	BDL
28-03-2019	01.04.2019	Week-5	54.2	17.2	12.8	20.4	0.10	0.2
April – 2019								
03-04-2019	08.04.2019	Week-1	63.8	16.3	14.5	21.4	0.12	BDL
04-04-2019	08.04.2019	Week-1	58.4	16.9	13.8	19.3	0.13	BDL
10-04-2019	15.04.2019	Week-2	53.4	19.1	13.7	21.5	0.11	0.1
11-04-2019	15.04.2019	Week-2	55.8	18.5	15.6	20.1	0.12	0.2
17-04-2019	22.04.2019	Week-3	51.0	17.7	14.2	20.9	0.13	0.1
18-04-2019	22.04.2019	Week-3	54.2	15.9	13.0	18.3	0.12	BDL
24-04-2019	29.04.2019	Week-4	49.5	16.8	14.9	18.8	0.10	BDL
25-04-2019	29.04.2019	Week-4	52.6	18.0	15.3	19.2	0.12	0.2
May – 2019								
08-05-2019	13.05.2019	Week-2	51.8	16.8	14.2	18.2	0.10	BDL
09-05-2019	13.05.2019	Week-2	53.2	17.0	16.1	21.3	0.11	BDL
15-05-2019	20.05.2019	Week-3	60.0	16.3	12.8	18.9	0.13	BDL
16-05-2019	20.05.2019	Week-3	53.4	15.2	15.6	19.7	0.12	0.1
22-05-2019	27.05.2019	Week-4	55.8	14.7	16.4	18.5	0.11	BDL
23-05-2019	27.05.2019	Week-4	51.0	13.9	14.5	19.6	0.12	BDL
29-05-2019	31.05.2019	Week-5	57.2	15.6	16.0	20.5	0.10	BDL
30-05-2019	31.05.2019	Week-5	56.3	19.1	13.9	19.4	0.11	0.1

Remark: All Parameters are within NAAQS Standards

[Signature]
Lab Chemist



[Signature]

Authorized Signatory

**GREEN ENVIROSAFE**

Engineers & Consultant Pvt Ltd.

Survey No-1405/06, Mayuri Residency, Shop No-16, 2nd Floor, Sanaswadi, Tal-Shirur, Pune-412208.

Mob.+ 9545084620 | E-mail:gesec12@gmail.com | www.greenenvirosafe.co.in

CIN No. : U74900PN2013PTC149666

Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Ambient Air Quality Monitoring Report

Report No-	GESEC/PRO/2019-20/06/121-144	Date of Report	10/06/2019
Name of Client	Equinox Environments (I) Pvt- Ltd-, Kolhapur, Maharashtra		
Project Name & Address	M/s. Hindalco Industries Limited (Dhangarwadi Bauxite Mine) A/P. Dhangarwadi village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra		
Sample Collected and Analyzed by	Green EnviroSafe Engineers & Consultant Pvt- Ltd, Pune, Maharashtra-		

Name Of Instrument & Calibration Details	Make	Date of calibration	Calibration Due Date	Calibration Certificate No-
Ambient Fine Dust	Instrumex	08/02/2019	07/02/2020	IPM-FDS/18-19/368-2

NAME OF LOCATION- Station: A6, GAJAPUR VILLAGE

Sampling Date	Date of Sample Registration	Parameter	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³	Hydro-Carbon
		Limit	100 (µg/m ³)	60 (µg/m ³)	80 (µg/m ³)	80 (µg/m ³)	04 (mg/m ³)	N.S (µg/m ³)
Analysis Method			IS: 5181 (Part-23) 2006	IS: 5181 (Part-23) 2006	(Modified West & Gaeke Method)	(Jacob & Hocheiser's Method)	NDIR Method	GC Method

March - 2019

06-03-2019	11.03.2019	Week-2	65.7	19.4	15.5	19.0	0.11	BDL
07-03-2019	11.03.2019	Week-2	58.2	20.4	12.7	17.8	0.09	BDL
13-03-2019	18.03.2019	Week-3	54.9	18.5	11.9	15.4	0.10	BDL
14-03-2019	18.03.2019	Week-3	63.2	13.3	14.3	18.2	0.11	0.1
20-03-2019	25.03.2019	Week-4	60.8	12.7	15.0	20.1	0.12	BDL
21-03-2019	25.03.2019	Week-4	54.1	15.0	13.2	19.2	0.11	BDL
27-03-2019	01.04.2019	Week-5	53.8	13.5	14.8	19.9	0.10	0.2
28-03-2019	01.04.2019	Week-5	50.4	14.8	16.0	22.7	0.11	0.1

April - 2019

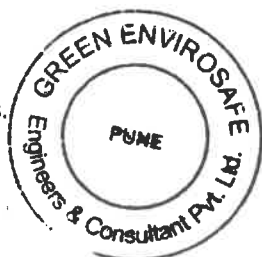
03-04-2019	08.04.2019	Week-1	60.4	19.3	13.2	18.8	0.10	BDL
04-04-2019	08.04.2019	Week-1	55.3	18.1	12.8	19.2	0.11	BDL
10-04-2019	15.04.2019	Week-2	53.7	21.3	14.5	19.0	0.12	BDL
11-04-2019	15.04.2019	Week-2	59.2	18.5	15.2	18.7	0.11	0.1
17-04-2019	22.04.2019	Week-3	58.7	20.0	14.7	20.5	0.13	BDL
18-04-2019	22.04.2019	Week-3	54.5	16.2	12.6	16.8	0.10	BDL
24-04-2019	29.04.2019	Week-4	52.8	20.4	13.6	18.3	0.10	BDL
25-04-2019	29.04.2019	Week-4	53.2	15.5	15.0	21.7	0.11	0.1

May - 2019

08-05-2019	13.05.2019	Week-2	66.1	16.7	16.0	21.4	0.12	BDL
09-05-2019	13.05.2019	Week-2	64.8	20.6	12.8	17.2	0.11	BDL
15-05-2019	20.05.2019	Week-3	50.2	18.1	14.5	16.1	0.12	0.1
16-05-2019	20.05.2019	Week-3	48.2	16.4	15.2	19.5	0.13	BDL
22-05-2019	27.05.2019	Week-4	45.7	15.8	17.2	18.8	0.12	0.1
23-05-2019	27.05.2019	Week-4	51.2	17.5	16.8	19.3	0.11	BDL
29-05-2019	31.05.2019	Week-5	53.7	19.2	18.7	18.2	0.12	BDL
30-05-2019	31.05.2019	Week-5	49.6	20.7	15.8	21.8	0.11	BDL

Remark: All Parameters are within NAAQS Standards.

Lab Chemist



Authorized Signatory



Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Ambient Air Quality Monitoring Report

Report No-	GESEC/PRO/2019-20/06/145-168	Date of Report	10/06/2019
Name of Client	Equinox Environments (I) Pvt- Ltd-, Kolhapur, Maharashtra		
Project Name & Address	M/s. Hindalco Industries Limited (Dhangarwadi Bauxite Mine) A/P. Dhangarwadi village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra		
Sample Collected and Analyzed by	Green EnviroSAFE Engineers & Consultant Pvt- Ltd, Pune, Maharashtra-		

Name Of Instrument& Calibration Details	Make	Date of calibration	Calibration Due Date	Calibration Certificate No-
Ambient Fine Dust Sampler	Instrumex	08/02/2019	07/02/2020	IPM-FDS/18-19/367-1

NAME OF LOCATION- Station: A7, THANEWADI VILLAGE

Sampling Date	Date of Sample Registration	Parameter	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³	Hydro-Carbon N.S (µg/m ³)
		Limit	100 (µg/m ³)	60 (µg/m ³)	80 (µg/m ³)	80 (µg/m ³)	04 (mg/m ³)	
Analysis Method			IS: 5181 (Part-23) 2006	IS: 5181 (Part-23) 2006	(Modified West & Gaeke Method)	(Jacob & Hocheiser's Method)	NDIR Method	GC Method

March – 2019

08-03-2019	11.03.2019	Week-2	56.8	15.6	17.6	19.2	0.08	BDL
09-03-2019	11.03.2019	Week-2	63.2	21.0	20.0	19.5	0.09	BDL
15-03-2019	18.03.2019	Week-3	60.8	17.3	16.9	18.4	0.12	BDL
16-03-2019	18.03.2019	Week-3	56.6	15.8	18.0	20.9	0.11	0.5
22-03-2019	25.03.2019	Week-4	53.1	14.5	19.2	21.1	0.10	BDL
23-03-2019	25.03.2019	Week-4	61.3	16.9	18.5	21.7	0.09	BDL
29-03-2019	01.04.2019	Week-5	54.2	17.0	20.1	20.5	0.10	0.1
30-03-2019	01.04.2019	Week-5	57.7	16.1	21.4	21.3	0.11	BDL

April – 2019

05-04-2019	08.04.2019	Week-1	60.4	15.5	14.4	18.7	0.12	BDL
06-04-2019	08.04.2019	Week-1	54.8	14.6	15.9	19.3	0.13	BDL
12-04-2019	15.04.2019	Week-2	59.2	16.8	16.1	20.0	0.12	BDL
13-04-2019	15.04.2019	Week-2	53.7	17.3	13.7	21.9	0.10	BDL
19-04-2019	22.04.2019	Week-3	51.5	14.6	15.2	19.4	0.11	0.1
20-04-2019	22.04.2019	Week-3	55.6	15.9	12.8	16.5	0.13	BDL
26-04-2019	29.04.2019	Week-4	52.8	17.5	17.0	20.8	0.11	BDL
27-04-2019	29.04.2019	Week-4	49.8	20.4	13.9	18.2	0.10	BDL

May – 2019

03-05-2019	13.05.2019	Week-1	52.7	17.2	13.8	18.5	0.12	0.2
04-05-2019	13.05.2019	Week-1	55.8	16.9	14.1	17.9	0.13	BDL
10-05-2019	20.05.2019	Week-2	50.6	18.8	12.7	20.4	0.10	BDL
11-05-2019	20.05.2019	Week-2	58.4	21.5	18.6	21.3	0.11	BDL
17-05-2019	27.05.2019	Week-3	60.3	20.2	17.3	20.5	0.12	BDL
18-05-2019	27.05.2019	Week-3	67.4	16.9	14.5	18.6	0.13	0.1
24-05-2019	31.05.2019	Week-4	55.1	19.1	16.6	18.0	0.11	BDL
25-05-2019	31.05.2019	Week-4	59.7	17.7	17.5	19.8	0.11	BDL

Remark: All Parameters are within NAAQS Standards.

Lab Chemist



Authorized Signatory



Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Ambient Air Quality Monitoring Report

Report No-	GESEC/PRO/2019-20/06/169-192	Date of Report	10/06/2019
Name of Client	Equinox Environments (I) Pvt- Ltd-, Kolhapur, Maharashtra		
Project Name & Address	M/s. Hindalco Industries Limited (Dhangarwadi Bauxite Mine) A/P. Dhangarwadi village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra		
Sample Collected and Analyzed by	Green EnviroSAFE Engineers & Consultant Pvt- Ltd, Pune, Maharashtra-		

Name Of Instrument & Calibration Details	Make	Date of calibration	Calibration Due Date	Calibration Certificate No-
Ambient Fine Dust Sampler	Instrumex	08/02/2019	07/02/2020	IPM-FDS/18-19/368-2

NAME OF LOCATION- Station: A 8, PANDAPNIWADI VILLAGE

Sampling Date	Date of Sample Registration	Parameter	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³	Hydro-Carbon
		Limit	100 (µg/m ³)	60 (µg/m ³)	80 (µg/m ³)	80 (µg/m ³)	04 (mg/m ³)	N.S (µg/m ³)
Analysis Method			IS: 5181 (Part-23) 2006	IS: 5181 (Part-23) 2006	(Modified West & Gaeke Method)	(Jacob & Hocheiser's Method)	NDIR Method	GC Method
March - 2019								
08-03-2019	11.03.2019	Week-2	56.2	18.0	13.5	18.4	0.10	BDL
09-03-2019	11.03.2019	Week-2	64.7	19.4	15.7	19.7	0.09	BDL
15-03-2019	18.03.2019	Week-3	53.8	16.7	18.2	18.5	0.11	BDL
16-03-2019	18.03.2019	Week-3	59.1	19.1	17.6	19.2	0.11	BDL
22-03-2019	25.03.2019	Week-4	61.8	17.5	14.8	17.3	0.12	0.2
23-03-2019	25.03.2019	Week-4	63.2	18.1	20.4	22.0	0.09	0.1
29-03-2019	01.04.2019	Week-5	60.7	16.7	18.6	21.1	0.09	BDL
30-03-2019	01.04.2019	Week-5	58.3	20.0	17.3	20.8	0.12	BDL
April - 2019								
05-04-2019	08.04.2019	Week-1	59.2	20.1	14.0	17.5	0.12	0.1
06-04-2019	08.04.2019	Week-1	53.7	16.9	16.2	21.9	0.11	BDL
12-04-2019	15.04.2019	Week-2	51.5	17.3	14.9	18.8	0.13	BDL
13-04-2019	15.04.2019	Week-2	60.8	16.9	12.7	16.7	0.12	BDL
19-04-2019	22.04.2019	Week-3	53.2	21.0	15.0	18.3	0.10	0.1
20-04-2019	22.04.2019	Week-3	55.8	18.7	13.2	19.5	0.10	0.2
26-04-2019	29.04.2019	Week-4	59.0	17.7	14.1	18.2	0.11	BDL
27-04-2019	29.04.2019	Week-4	61.4	20.4	12.5	15.0	0.12	BDL
May - 2019								
03-05-2019	13.05.2019	Week-2	64.7	16.9	14.2	19.2	0.13	0.1
04-05-2019	13.05.2019	Week-2	53.8	17.3	13.7	19.4	0.10	BDL
10-05-2019	20.05.2019	Week-3	53.7	18.8	15.5	20.8	0.11	BDL
11-05-2019	20.05.2019	Week-3	51.5	21.5	14.8	18.2	0.11	BDL
17-05-2019	27.05.2019	Week-4	60.8	20.2	13.2	16.6	0.10	BDL
18-05-2019	27.05.2019	Week-4	55.6	19.8	12.5	15.0	0.09	BDL
24-05-2019	31.05.2019	Week-5	52.8	18.2	15.1	18.4	0.08	0.2
25-05-2019	31.05.2019	Week-5	50.8	21.7	13.7	18.8	0.11	BDL

Remark: All Parameters are within NAAQS Standards.

Lab Chemist



Authorized Signatory

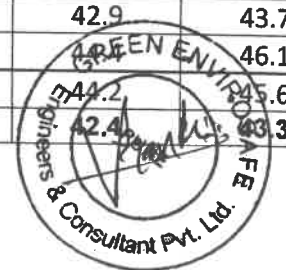


Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Ambient Noise Monitoring Report

Report No.	GESEC/PRO/2019-20/06/192-200	Date of Report	10/06/2019
Name of Client	Equinox Environments (I) Pvt. Ltd., Kolhapur, Maharashtra.		
Project Name	M/s. Hindalco Industries Limited, (Dhangarwadi Bauxite Mine), A/P. Dhangarwadi Village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra.		
Address			
Sample Collected By	Green EnviroSafe Engineers & Consultant Pvt. Ltd, Pune, Maharashtra.		
Date of Sampling	April-2019		
Name Of Instrument & Calibration Details	Date of calibration	Calibration Due Date	Calibration Certificate No.
Sound Level meter	22/06/2018	22/06/2019	S.No.081202677
Analysis Method	IS: 4758-1968 Reaff.2002.		

Date	01-04-2019	02-04-2019	08-04-2019	09-04-2019	15-04-2019	16-04-2019	22-04-2019	23-04-2019
Location	Core zone	Near Dumping Site	Near Houlage Road	Near Mines Office	Dhangarwadi Village	Thanewadi Village	Pandapniwad i village	Gajapur Village
Time	N1	N2	N3	N4	N5	N6	N7	N8
6.00	56.6	61.0	58.2	55.7	41.8	42.6	43.1	44.5
7.00	64.2	62.0	64.1	61.2	38.6	39.4	39.7	40.9
8.00	65.9	64.1	65.9	63.4	39.6	41.0	41.3	42.2
9.00	68.0	66.5	65.0	59.0	46.4	44.9	45.7	46.6
10.00	68.0	68.4	66.9	61.2	47.4	47.4	49.2	49.1
11.00	68.5	68.9	68.0	62.0	53.9	52.9	50.8	52.2
12.00	69.8	63.0	68.5	64.1	53.4	53.2	51.7	51.9
13.00	67.9	68.4	66.7	61.7	53.7	53.1	51.7	51.7
14.00	67.9	68.0	66.1	61.2	54.2	54.3	51.8	53.9
15.00	66.0	66.7	64.4	59.4	53.3	52.4	49.7	51.4
16.00	64.3	65.2	65.3	58.0	54.0	51.5	53.2	54.4
17.00	68.3	63.3	65.0	56.8	54.0	46.4	53.4	51.7
18.00	67.4	62.3	68.5	62.4	54.6	53.8	53.3	53.2
19.00	66.8	61.1	64.4	62.0	49.1	48.4	48.1	48.3
20.00	63.2	56.3	59.8	57.3	39.1	38.6	43.9	44.9
21.00	57.3	59.0	62.8	59.9	39.4	38.8	39.3	40.3
22.00	51.6	53.4	56.8	53.3	39.9	39.2	39.6	40.4
L10	57.0	57.9	59.2	56.4	39.3	39.0	39.7	40.7
L50	66.8	63.3	65.0	61.2	49.1	47.4	49.2	49.1
L90	68.4	68.4	68.2	62.8	54.1	53.4	53.2	53.5
Lday	69.0	65.1	66.4	61.9	52.8	50.9	52.3	51.8
23.00	54.9	52.5	56.1	55.8	42.3	42.6	43.5	43.8
24.00	54.6	52.9	56.5	56.0	42.0	43.4	43.6	44.8
1.00	54.8	52.9	56.8	56.5	42.6	41.5	42.8	44.0
2.00	55.8	53.1	57.5	56.8	41.9	41.3	41.8	42.7
3.00	55.8	53.9	58.1	57.2	41.8	41.3	42.9	43.7
4.00	51.4	49.2	52.9	52.6	43.4	44.0	46.1	46.1
5.00	50.9	48.6	52.8	52.4	42.5	43.4	45.6	45.6
L10	51.2	49.0	52.9	52.5	41.9	41.3	43.3	43.3





Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

	L50	L90	Lnight	Ldn	Avg L10	Avg L 50			
	54.8	55.8	55.2	67.9	54.1	60.8	52.9	53.4	53.2
	56.5	57.7	56.9	66.6	56.0	60.8	56.0	57.0	56.3
	42.3	42.9	42.3	52.6	40.6	45.7	42.6	43.6	42.7
	43.5	44.3	43.6	51.6	40.2	45.0	43.5	44.3	43.6
	44.0	45.8	44.1	52.8	41.0	46.4	44.0	45.8	44.1
	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8
	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6

Lab Chemist

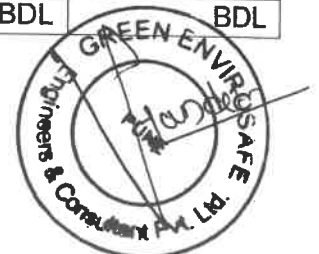


Authorized Signatory



Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Client Name:		Equinox Environments (I) Pvt. Ltd., Kolhapur, Maharashtra.		Report Number		GESEC/PRO/2019- 20/06/206-208
Project Name and Address: M/S Hindalco Industries Limited, Dhargarwadi Bauxite Mine, Dhargarwadi Village, Shahuwadi Taluka, Kolhapur District, Maharashtra.				Date of Report		10-05-2019
				Nature of sample		Surface Water
				Date of Sampling		09-04-2019
				Date of Sample Received		10-04-2019
Sample Collected & Analyzed By: Green EnviroSAFE Engineers & Consultant Pvt- Ltd, Pune, Maharashtra.				Date of Analysis Started		10-04-2019
Sr. No.	Parameter	Unit(s)	Location			
			W1 Near Mine Office Borewell	W-2 Shali Nadi Up Stream	W-3 Shali Nadi Down Stream	
1.	Odor	--	Un-objectionable	Un-objectionable	Un-objectionable	
2.	Taste	--	Agreeable	Agreeable	Agreeable	
3.	Color	Hazen	<5	<5	<5	
4.	pH	--	7.75	7.54	7.63	
5.	Turbidity	NTU	<5	<5	<5	
6.	DO	mg/lit	3.10	4.80	4.20	
7.	TDS	mg/lit	150.31	178.95	243.05	
8.	TSS	mg/lit	10.24	12.53	23.59	
9.	BOD:3 days at 27°C	mg/lit	8.45	11.81	14.86	
10.	Alkalinity as CaCO ₃	mg/lit	39.34	20.56	45.79	
11.	Total Hardness as CaCO ₃	mg/lit	40.09	96.14	127.54	
12.	Nitrate as NO ₃	mg/lit	15.50	13.16	17.76	
13.	Phosphorous as PO ₄	mg/lit	0.13	0.01	0.95	
14.	Chlorides as Cl ⁻	mg/lit	8.20	29.98	45.97	
15.	Sulphates as SO ₄	mg/lit	2.15	5.98	9.82	
16.	Sodium as Na	mg/lit	1.24	1.75	3.56	
17.	Potassium as K	mg/lit	4.12	8.56	10.41	
18.	Calcium as Ca	mg/lit	11.95	25.64	30.55	
19.	Magnesium as Mg	mg/lit	2.27	7.12	11.37	
20.	Lead as Pb	mg/lit	BDL	BDL	BDL	
21.	Manganese as Mn	mg/lit	BDL	BDL	BDL	
22.	Cadmium as Cd	mg/lit	BDL	BDL	BDL	
23.	Chromium as Cr	mg/lit	BDL	BDL	BDL	
24.	Copper as Cu	mg/lit	BDL	BDL	BDL	
25.	Zinc as Zn	mg/lit	BDL	BDL	BDL	
26.	Iron as Fe	mg/lit	0.14	0.22	0.25	
27.	Fluorides as F ⁻	mg/lit	0.08	0.13	0.35	
28.	Mercury as Hg	mg/lit	BDL	BDL	BDL	
29.	Selenium as Se	mg/lit	BDL	BDL	BDL	
30.	Arsenic as As	mg/lit	BDL	BDL	BDL	





GREEN ENVIROSAFE
Engineers & Consultant Pvt Ltd.

Survey No-1405/06, Mayuri Residency, Shop No-16, 2nd Floor, Sanaswadi, Tal-Shirur, Pune-412208.
Mob-+ 9545084620 | E-mail:gesec12@gmail.com | www.greenenvirosafe.co.in
CIN No. : U74900PN2013PTC149666

Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

31.	Cyanide as CN	mg/lit	BDL	BDL	BDL
32.	Boron as B	mg/lit	BDL	BDL	BDL

LAB ANALYZED -



AUTHORIZED SIGNATORY



Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Client Name: Equinox Environments (I) Pvt. Ltd., Kolhapur, Maharashtra.			Report Number : GESEC/PRO/2019-20/06/201-205				
Project Name and Address: M/s. Hindalco Industries Limited (Dhangarwadi Bauxite Mine) A/P. Dhangarwadi village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra.			Date of Report		10.06.2019		
			Nature of sample		Ground water		
			Date of Sampling		20.05.2019		
			Date of Sample Received		21.05.2019		
			Date of Sample Analysis		21.05.2019		
Sample Collected & Analyzed By : Green EnviroSAFE Engineers & Consultant Pvt- Ltd, Pune, Maharashtra			Location				
			W-4 PANDAPNIWADI VILLAGE	W-5 THANEWADI VILLAGE	W-6 DHANGARWADI VILLAGE	W-7 PATEWADI VILLAGE	W-8 BHANDARWADI VILLAGE
Sr. No.	Parameter	Unit(s)					
1.	Odor	--	Un-objectionable	Un-objectionable	Un-objectionable	Un-objectionable	
2.	Taste	--	Agreeable	Agreeable	Agreeable	Agreeable	
3.	Color	Hazen	<5	<5	<5	<5	
4.	pH	--	7.71	7.56	7.69	7.42	
5.	Turbidity	NTU	<5	<5	<5	<5	
6.	DO	mg/lit	2.20	2.28	2.82	2.20	
7.	TDS	mg/lit	373.21	287.78	250.34	221.68	
8.	TSS	mg/lit	2.55	3.68	3.68	5.59	
9.	BOD:3 days at 27°C	mg/lit	20.63	16.45	14.78	11.74	
10.	Alkalinity as CaCO ₃	mg/lit	15.47	21.68	14.96	30.57	
11.	Total Hardness as CaCO ₃	mg/lit	164.35	101.68	61.08	34.00	
12.	Nitrate as NO ₃	mg/lit	3.59	5.87	7.44	8.95	
13.	Phosphorous as PO ₄	mg/lit	0.35	0.95	0.84	0.05	
14.	Chlorides as Cl ⁻	mg/lit	72.58	56.87	91.66	55.12	
15.	Sulphates as SO ₄	mg/lit	8.01	13.74	5.44	11.19	
16.	Sodium as Na	mg/lit	2.41	3.68	1.03	5.27	
17.	Potassium as K	mg/lit	12.26	8.91	8.71	14.79	
18.	Calcium as Ca	mg/lit	39.98	25.71	12.04	15.74	
19.	Magnesium as Mg	mg/lit	15.63	9.08	7.52	4.11	
20.	Lead as Pb	mg/lit	BDL	BDL	BDL	BDL	
21.	Manganese as Mn	mg/lit	BDL	BDL	BDL	BDL	
22.	Cadmium as Cd	mg/lit	BDL	BDL	BDL	BDL	
23.	Chromium as Cr	mg/lit	BDL	BDL	BDL	BDL	
24.	Copper as Cu	mg/lit	BDL	BDL	BDL	BDL	
25.	Zinc as Zn	mg/lit	BDL	BDL	BDL	BDL	
26.	Iron as Fe	mg/lit	0.16	0.084	0.05	0.01	
27.	Fluorides as F ⁻	mg/lit	0.55	0.41	0.06	0.74	
28.	Mercury as Hg	mg/lit	BDL	BDL	BDL	BDL	





GREEN ENVIROSAFE
Engineers & Consultant Pvt Ltd.

Survey No-1405/06, Mayuri Residency, Shop No-16, 2nd Floor, Sanaswadi, Tal-Shirur, Pune-412208.
Mob-+ 9545084620 | E-mail:gesec12@gmail.com | www.greenenvirosafe.co.in
CIN No. : U74900PN2013PTC149666

Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

29.	Selenium as Se	mg/lit	BDL	BDL	BDL	BDL	BDL
30.	Arsenic as As	mg/lit	BDL	BDL	BDL	BDL	BDL
31.	Cyanide as CN	mg/lit	BDL	BDL	BDL	BDL	BDL
32.	Boron as B	mg/lit	BDL	BDL	BDL	BDL	BDL

LAB ANALYZED -



AUTHORIZED SIGNATORY



Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

TEST CERTIFICATE

Report No: GESEC/PRO/2019-20/06/212	Date of Report	01.05.2019
Client Name and Address: M/s. Hindalco Industries Limited, (Dhangarwadi Bauxite Mine), A/P. Dhangarwadi Village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra.	Date of Sampling	19.04.2019
	Start Date of Analysis	20.04.2019
	End Date of Analysis	21.04.2019
	Sample Details	Canteen waste Analysis water
	Nature of sample	Liquid
Name of Client	Equinox Environments (I) Pvt. Ltd., Kolhapur, Maharashtra.	
Sample Collected By	Green EnviroSafe Engineers & Consultant Pvt. Ltd, Pune	

Water Analysis Report

Sr. No.	Parameter	Result	MPCB Limits	Unit(s)	Standard Method
1.	Total Suspended Solids	77.42	100	mg/lit	APHA 2540-D
2.	Total Dissolved Solids	815.01	2100	mg/lit	APHA 2540-C-D
3.	COD	75.16	250	mg/lit	APHA 5210 B
4.	BOD for 3 days at 27°C	40.11	100	mg/lit	APHA 5220 B
5.	Total Solids	892.43	-----	mg/lit	APHA 2540-C
6.	Oil and Grease	<5	10	mg/lit	APHA 5520 B

Remark(s): All parameters are within the MPCB limit.

ANALYZED BY-

AUTHORIZED SIGNATORY

Instrument Calibration Details for waste Water

1.	Name Of Instrument	µP ^H System	Date Of Calibration	15/04/2019
	Calibration Certificate No.	SYS/04_18/53_04	Due Date Of Calibration	14/05/2019
2.	Name Of Instrument	Water Bath	Date Of Calibration	30/01/2019
	Calibration Certificate No.	UI/180131/523/006	Due Date Of Calibration	29/01/2020
3.	Name Of Instrument	DIG WEIGHING BALANCE	Date Of Calibration	30/01/2019
	Calibration Certificate No.	UI/180201/103/001	Due Date Of Calibration	29/01/2020
4.	Name Of Instrument	BOD Incubator	Date Of Calibration	30/01/2019
	Calibration Certificate No.	UI/180131/523/005	Due Date Of Calibration	29/01/2020
5.	Name Of Instrument	HOT AIR OVEN	Date Of Calibration	30/01/2019
	Calibration Certificate No.	UI/180131/523/012	Due Date Of Calibration	29/01/2020
6.	Name Of Instrument	COD	Date Of Calibration	30/01/2019
	Calibration Certificate No.	UI/180131/523/002	Due Date Of Calibration	29/01/2020
7.	Name Of Instrument	UV Visible Spectra	Due Date Of Calibration	02/06/2019

Terms and conditions

- The report is refer only to the sample tested and not applies to the bulk.
- The results shown in this test report may differ based on various factors including temperature, humidity, pressure, retention time etc.
- The test report cannot be reproduced wholly or in part and cannot be used for promotional or publicity purpose without the written consent of laboratory, GESEC.
- Samples will be retained for a period of seven (7) days after completion of analysis. Longer retention periods can be arranged, on request of the customer.
- We strictly maintain the confidentiality of all test result of sample(s) collected by us/ supplied by customer and not revel to third party unless required by the statutory or legal requirement.
- MoEF approved Lab by Govt. of India. From date. 09/02/2017 to 08/02/2022.





Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

TEST CERTIFICATE

Report No: GESEC/PRO/2019-20/06/213	Date of Report	01.06.2019
Client Name and Address: M/s. Hindalco Industries Limited, (Dhangarwadi Bauxite Mine), A/P. Dhangarwadi Village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra.	Date of Sampling	20.05.2019
	Start Date of Analysis	21.05.2019
	End Date of Analysis	22.05.2019
	Sample Details	Canteen waste Analysis water
	Nature of sample	Liquid
Name of Client	Equinox Environments (I) Pvt. Ltd., Kolhapur, Maharashtra.	
Sample Collected By	Green EnviroSafe Engineers & Consultant Pvt. Ltd, Pune	

Water Analysis Report

Sr. No.	Parameter	Result	MPCB Limits	Unit(s)	Standard Method
1.	Total Suspended Solids	79.96	100	mg/lit	APHA 2540-D
2.	Total Dissolved Solids	932.58	2100	mg/lit	APHA 2540-C-D
3.	COD	81.16	250	mg/lit	APHA 5210 B
4.	BOD for 3 days at 27°C	43.35	100	mg/lit	APHA 5220 B
5.	Total Solids	1012.54	-----	mg/lit	APHA 2540-C
6.	Oil and Grease	<5	10	mg/lit	APHA 5520 B

Remark(s): All parameters are within the MPCB limit.

ANALYZED BY-

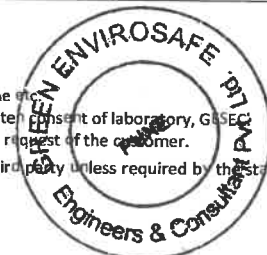
AUTHORIZED SIGNATORY

Instrument Calibration Details for waste Water

Sr.	Name Of Instrument	µP ^H System	Date Of Calibration
1.	Calibration Certificate No.	SYS/04_18/53_04	15/05/2019
2.	Name Of Instrument	Water Bath	Due Date Of Calibration
	Calibration Certificate No.	UI/180131/523/006	14/06/2019
3.	Name Of Instrument	DIG WEIGHING BALANCE	Date Of Calibration
	Calibration Certificate No.	UI/180201/103/001	30/01/2019
4.	Name Of Instrument	BOD Incubator	Date Of Calibration
	Calibration Certificate No.	UI/180131/523/005	29/01/2020
5.	Name Of Instrument	HOT AIR OVEN	Date Of Calibration
	Calibration Certificate No.	UI/180131/523/012	30/01/2019
6.	Name Of Instrument	COD	Date Of Calibration
	Calibration Certificate No.	UI/180131/523/002	29/01/2020
7.	Name Of Instrument	UV Visible Spectra	Due Date Of Calibration
			02/06/2019

Terms and conditions

- The report is refer only to the sample tested and not applies to the bulk.
- The results shown in this test report may differ based on various factors including temperature, humidity, pressure, retention time etc.
- The test report cannot be reproduced wholly or in part and cannot be used for promotional or publicity purpose without the written consent of laboratory, GESEC.
- Samples will be retained for a period of seven (7) days after completion of analysis. Longer retention periods can be arranged, on request of the customer.
- We strictly maintain the confidentiality of all test result of sample(s) collected by us/ supplied by customer and not reveal to third party unless required by the statutory or legal requirement.
- MoEF approved Lab by Govt. of India. From date. 09/02/2017 to 08/02/2022.





Client Name:	Equinox Environments (I) Pvt. Ltd., Kolhapur, Maharashtra.	Report Number	GESEC/PRO/2019-20/06/209-211		
Project Name and Address: M/s. Hindalco Industries Limited (Dhangarwadi Bauxite Mine) A/P. Dhangarwadi village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra.		Date of Report	10/06/2019		
		Nature of sample	Soil		
		Date of Sampling	20.05.2019		
		Date of Sample Received	21.05.2019		
		Date of Sample Analysis	22.05.2019		
Sample Collected & Analyzed By :		Green EnviroSafe Engineers & Consultant Pvt- Ltd, Pune, Maharashtra			
Sr.No.	Test Parameters	Locations			
		S1- Dhangar wadi Village	S2- Thanewadi Village	S3- Pandapni wadi Village	Analysis Method
1	pH (1:5Aq. Extraction)	7.81	8.15	7.89	IS 2720 (Part 26)
2	E.C. (µs)(1:5 Aq. Suspension)	2.78	2.96	2.84	IS:1892
3	Nitrates (mg/kg)	45.02	70.78	53.01	IS 2720
4	Available Phosphorus as P ₂ O ₅ (mg/kg)	11.03	57.83	33.69	IS 2720
5	Potassium as K ₂ O (mg/kg)	25.81	84.01	53.92	IS 2720
6	Available Sodium as Na ₂ O (mg/kg)	0.23	0.98	0.63	IS 2720
7	Ex. Calcium (mg/kg)	459.12	568.41	539.87	IS 2720
8	Ex. Magnesium (mg/kg)	249.37	300.12	268.51	USEPA Method 3050B
9	Water Soluble Chlorides as Cl (mg/kg)	250.01	289.17	276.94	IS:812 P-4
10	Organic Carbon (%)	1.56	1.92	1.86	IS 2720-P22
11	Texture	Sandy Soil	Sandy Soil	Sandy Soil	IS 2720-P4
	a) Sand (%)	61.32	58.02	57.94	
	b) Silt (%)	9.14	12.96	10.33	
	c) Clay (%)	29.54	29.02	31.73	
12	Total Soluble Salts (mg/kg)	1862.47	1986.37	1900.27	IS 2720

M. White

LAB ANALYZED -



A. Hande

AUTHORIZED SIGNATORY



Stack Analysis Report

Report No.	GESEC/PRO/2019-20/06/214	Date of Report	01/04/2019
Name of Client	Equinox Environments (I) Pvt. Ltd., Kolhapur, Maharashtra.		
Project Name and Address	M/s. Hindalco Industries Limited, (Dhangarwadi Bauxite Mine), A/P. Dhangarwadi Village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra.		
Sample Collected By	Green EnviroSafe Engineers & Consultant Pvt. Ltd, Pune, Maharashtra.		
Date of Sampling	25/03/2019		
Name Of Instrument	Stack Monitoring Kit	Date Of Calibration	22.12.2018
Calibration Certificate No.	UI/181222/525/001	Due Date Of Calibration	21.12.2019

Stack Details

Stack –attached to	DG(45 KVA)	I.D. of stack at port (m)D	0.1
Crosssection of the stack	Round	Stack crosssectional area (m ²)	0.0079
Height of stack above ground (m)	5.5	Consumption of fuel (l/hr)	3.0
Fuel used	HSD	Load on the system	Approx.90%

Emission details

Sr. No.	Particulars	Unit	Value
1	Temperature	°C	103
2	Differential Pressure	mmWG	0.70
3	Velocity of the gas	m/sec	3.08
4	Gas flow rate at NTP	Nm ³ /hr	69.11
5	Particulate matter	mg/NM ³	30.48
6	SO ₂	Kg/Hr	0.05


LAB ANALYZED -




AUTHORIZED SIGNATORY

DHANGARWADI BAUXITE MINE

**TAHSIL: SHAHUWADI, DISTRICT: KOLHAPUR,
STATE: MAHARASHTRA**

OF

M/s. HINDALCO INDUSTRIES LTD.

ENVIRONMENTAL QUALITY MONITORING REPORT

SEASON - MONSOON 2019

JUNE, JULY, AUGUST

PREPARED BY



EQUINOX ENVIRONMENTS (I) PVT. LTD.,

**ENVIRONMENTAL, CIVIL & CHEMICAL ENGINEERS, CONSULTANTS & ANALYSTS,
KOLHAPUR (MS)**

E-mail: lab@equinoxenvi.com, enquiry@equinoxenvi.com

An ISO 9001:2015 & QCI NABET ACCREDITED ORGANIZATION



2019 - 2020

INDEX

TITLE	PAGE NO.
PREFACE	1
EXECUTIVE SUMMARY	2
AREA DETAILS	3
ENVIRONMENTAL QUALITY	5
SURFACE WATER QUALITY	6
GROUND WATER QUALITY	8
DOMESTIC EFFLUENT QUALITY	10

PREFACE

M/s. Hindalco Industries Limited entrusted environmental quality monitoring at **Dhangarwadi Bauxite Mine** situated Dhangarwadi village, Shahuwadi Tahsil, Kolhapur District, Maharashtra to **Equinox Environments (India) Pvt. Ltd.** during monsoon season of the year 2019.

According to MoU dt. 1st September 2018, **The Equinox Environments (India) Pvt. Ltd.** has availed the various monitoring services by lab viz. **Green EnviroSAFE Engineers & Consultant Pvt. Ltd.** which is recognized and duly approved by the **Ministry of Environment, Forests & Climate Change (MoEFCC); New Delhi** (through Notification No. S.O. 1174 (E) dated 18.07.2007 as amended vide Notification No. S.O. 388 (E) dated 10.02.2017) and NABL (ISO/IEC 17025:2005 vide certificate number TC-8061 dated 03.11.2018) has also received certifications namely ISO 9001:2015 and OHSAS 18001: 2007 from Crescent Quality Certification Pvt. Ltd.

The environmental monitoring for water quality was carried out in core zone and buffer zone during the months of June–July–August 2019. The data obtained was compiled to assess the current environmental status of the mining as well as the surrounding villages in the study area.

Equinox Environments (India) Pvt. Ltd. gratefully acknowledges the cooperation extended by management and staff of M/s. Hindalco Industries Limited and village people to the field staff.

EXECUTIVE SUMMARY

Dhangarwadi Bauxite Mine of M/s. Hindalco Industries Limited includes the study of the water quality (ground water, surface water and domestic waste water) in core zone and buffer zone around the mine lease area during the monsoon season of the year 2019.

Water quality monitoring consists of the study of surface and ground water sources and its quality in the core and buffer zone of the lease area. Assessment of water quality in the study area and in the mine area includes the quality assessment of parameters as per the Indian Standard IS: 10500 (Drinking water standard). Water samples were collected from selected locations during study period and analyzed in the laboratory as per the standard IS & APHA Procedures.

AREA DETAILS

INTRODUCTION

Hindalco Industries is one of the leading producers of aluminum in the country. The company business involves bauxite mining to alumina refining. Alumina metal conversion, sheet, extrusion, foil manufacturing and is spread all over the country. The company is operating number of bauxite mines in Maharashtra, Orissa, Chhattisgarh and Jharkhand to feed the Alumina plants located in Belgaum, Renukut and Muri.

As per the directions of the Government of Maharashtra the mining plan was prepared for the entire lease area of 41.80 ha and the same was approved by the Indian Bureau of Mines vide letter no. MP/KLP/MAH-73-SZ, DT.11/11/2003 on submission of approved mining plan Government of Maharashtra has sanctioned mining lease for the production of bauxite for the revenue land and The Environmental Clearance was obtained for the production of 0.6 million TPA of bauxite over the entire area. The mining lease was executed by the collector of Kolhapur over the area on 05/05/2008 and the lease expires on 04/05/2038.

MINE DETAIL

Dhangarwadi bauxite mine is located near Dhangarwadi village of Shahuwadi Tahsil of Kolhapur District in Maharashtra state.

GEOGRAPHICAL DETAILS

Latitude: 16.0°54.0'0.0"
Longitude: 73.0°49.0'5.0"
MSL: 1020m

DETAILS OF LEASE AREA

The following table gives the details of the area in terms of District, Tahsil, Village, Gat no. and Area granted in hectors.

District	Tahsil	Village	Gat No.	Area Granted (ha)
Kolhapur	Shahuwadi	Dhangarwadi	45	12.32
			46 (p)	6.53
			50(p)	2.17
			52	10.58
			53(p)	5.09
			56(p)	2.76
		Ainwadi	106(p)	2.35
		Total		41.80

DHANGARWADI BAUXITE MINE (M/s. Hindalco Industries Limited)	
DETAILS	
State	Maharashtra
District	Kolhapur
Tahsil	Shahuwadi
Village	Dhangarwadi
Latitude	16°54'0.0"
Longitude	73°49'5.0"
Nature of the area	Plateau terrain
Toposheet no.	47 H/13.
GENERAL CLIMATIC CONDITIONS	
Maximum temperature	40.0° C
Minimum temperature	16.0° C
ACCESSIBILITY	
Road connectivity	Approached by road connecting Dhopeswar Junction which is at a distance of 8 kms, located 6 kms from Malkapur Town on Ratnagiri-Nagpur National Highway (NH-4).
Rail connectivity	Kolhapur railway station (56km)
Airport	Kolhapur (60km)
Sea Port	Ratnagiri (95km)
Biosphere reserve	Not any
Sanctuary	Chandoli wild life sanctuary is situated at about 20 kms.

INDEX MAP



INDIA



MAHARASTRA

ARABIAN SEA



KOLHAPUR

(Mine Lease Area)

DHANGARWADI BAUXITE MINE

Ms Hindalco Industries Limited

NOT TO SCALE



LEGEND



MINE LEASE



RIVER



NALLAH



ROAD



FOREST BOUNDARY

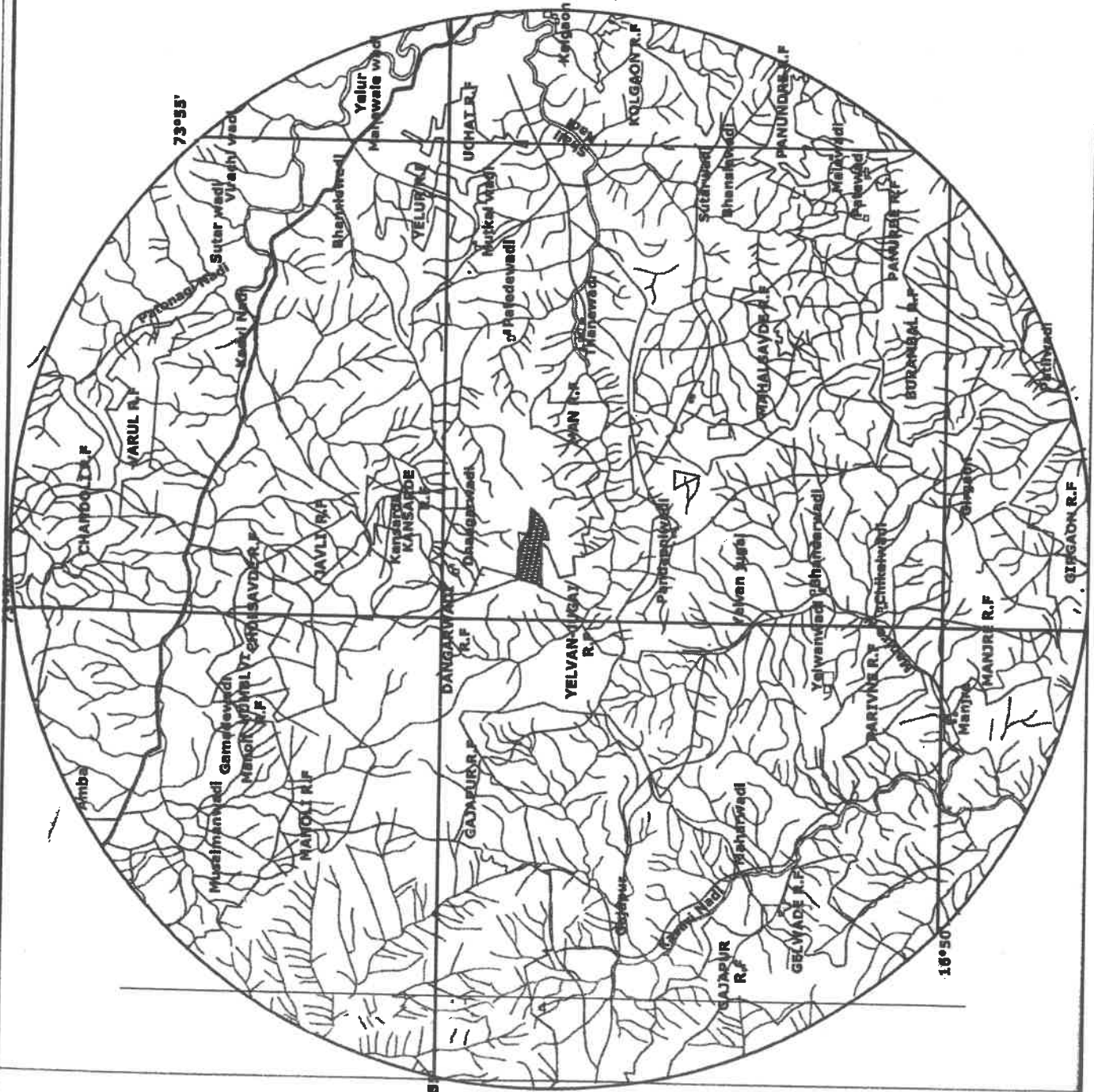


PROJECT: DHANGARWADI BAUXITE MINES

CLIENT :HINDALCO INDUSTRIES LIMITED

TITLE: TOPOGRAPHICAL MAP OF THE STUDY AREA

Prepared By
Equinox Environments India Pvt. Ltd.,
Kolhapur



ENVIRONMENTAL QUALITY

Environmental quality monitoring at Dhangarwadi Bauxite Mine of M/s. Hindalco Industries Limited at Dhangarwadi village of Shahuwadi Tahsil, Kolhapur district, Maharashtra includes water monitoring of various environmental components viz. ground, surface and domestic waste water within core zone and buffer zone around the mine lease area.

WATER QUALITY

Water quality monitoring consists of the study of water sources and its quality in the core and buffer zone of the lease area. Its study consists of following two important systems of water bodies:

- Surface water quality.
- Ground water quality.

A total of 8 locations have selected, out of which 5 are for ground water and 3 are for surface water. Location of water quality monitoring stations is given below.

WATER QUALITY MONITORING LOCATIONS

Code	Name of Sampling Station	Source of Water
W-1	Mine Pit Water	Surface Water
W-2	Shali Nadi (Up Stream)	Surface Water
W-3	Shali Nadi (Down Stream)	Surface Water
W-4	Pandapniwadi Village	Ground Water
W-5	Thanewadi Village	Ground Water
W-6	Dhangarwadi Village	Ground Water
W-7	Patewadi Village	Ground Water
W-8	Bhandarwadi Village	Ground Water

SAMPLING DETAILS

The water samples were collected from selected sampling locations, which are coming under core zone and buffer zone around the mine lease area. Assessment of water quality in the study area and in the mine area includes the quality assessment of parameters as per the Indian Standard IS 10500 (Drinking water standard). Samples were collected in the monsoon season of the year 2019 as per the prescribed sample collecting methods and analyzed as per the IS standard procedures.

SURFACE WATER QUALITY

Proper drainage system has prepared to drag the monsoon water into the mine pit area for harvesting rain water and overflow of the same is being channelized through series of check dams and settling tanks so as to reduce the water pollution. Buffer zones have seasonal nallahs which used to recharge the ground during post monsoon. A total of 3 locations have selected of which 1 from core zone and 2 from buffer zone.



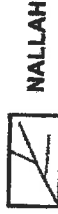
LEGEND



MINE LEASE



RIVER



NALLAH



ROAD



FOREST BOUNDARY



WATER SAMPLING LOCATION

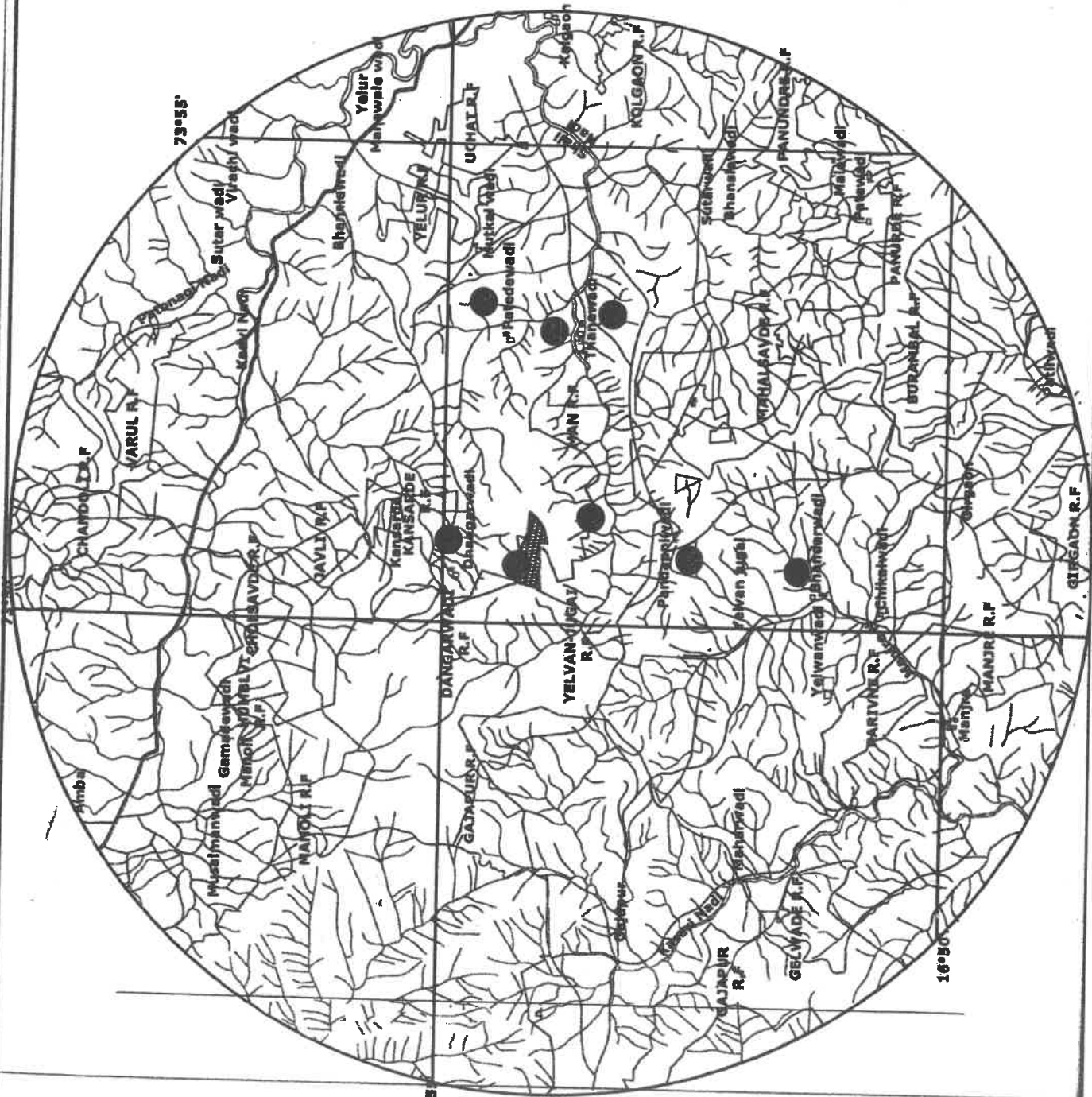


PROJECT: DHANGARWADI BAUXITE MINES

CLIENT: HINDALCO INDUSTRIES LIMITED

TITLE: WATER SAMPLING LOCATIONS MAP

**PREPARED BY
EQUINOX ENVIRONMENTS INDIA PVT. LTD.,
KOLHAPUR**





Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Surface Water Analysis Report

Client Name:	Equinox Environments (I) Pvt. Ltd., Kolhapur, Maharashtra.	Report Number	GESEC/PRO/2019- 20/08/218-220
Project Name and Address: M/S Hindalco Industries Limited, Dhangarwadi Bauxite Mine, Dhangarwadi Village, Shahuwadi Taluka, Kolhapur District, Maharashtra.s:	Date of Report	19/08/2019	
	Sample Details	Surface Water	
	Nature of sample	Liquid	
	Date of Sampling	26/07/2019	
	Date of Sample Registration	27/07/2019	
	Date of Analysis	27/07/2019	
Sample Collected and Analyzed by	Green EnviroSafe Engineers & Consultant Pvt. Ltd, Pune, Maharashtra.		

Sr. No.	Parameter	Unit(s)	Location			Limits as per IS 10500:2012	Analysis Method
			W1 Mine Pit Water	W-2 Shali Nadi Up Stream	W-3 Shali Nadi Down Stream		
1.	Odor	--	Un- objection able	Un- objection able	Un- objection able	Agreeable	IS : 3025 (Part5):1983,
2.	Taste	--	Agr eeable	Ag reeable	Agr eeable	Agreeable	IS : 3025(Part 7and 8):
3.	Color	Hazen	<5.00	<5.00	<5.00	5.00	IS : 3025 (Part4):1983
4.	pH	--	7.52	7.57	7.60	6.5-8.5	APHA 4500 H ⁺ , A, 23 rd Ed.2017
5.	Turbidity	NTU	<5.00	<5.00	<5.00	< 1.00	IS 3025 (Part 10): 1983
6.	DO	mg/lit	4.10	5.20	5.23	Not Specified	IS 3025 (Part 38)
7.	TDS	mg/lit	153.33	163.74	186.53	< 500.00	IS 3025 (Part 16):
8.	TSS	mg/lit	10.24	12.53	23.59	Not Specified	IS: 3025 (Part-17)- 1984
9.	BOD:3 days at 27°C	mg/lit	6.45	8.81	13.86	Not Specified	IS:3025 (Part 44)- 1993,
10.	Alkalinity as CaCO ₃	mg/lit	39.34	20.56	45.79	<200	IS:3025 Part-23
11.	Total Hardness as CaCO ₃	mg/lit	64.97	42.83	78.50	< 200.00	IS 3025 (Part 21): 2009
12.	Nitrate as NO ₃	mg/lit	15.58	23.16	17.76	< 45.00	APHA 4500 NO ₃ - B
13.	Phosphorous as PO ₄	mg/lit	0.13	0.01	0.95	Not Specified	APHA 4500 P-C
14.	Chlorides as Cl ⁻	mg/lit	18.26	29.98	45.97	< 250.00	IS 3025 (Part 32):
15.	Sulphates as SO ₄	mg/lit	8.15	5.98	9.82	< 200.00	IS 3025 (Part-24):
16.	Sodium as Na	mg/lit	1.24	1.75	3.56	Not Specified	APHA 3111 B





GREEN ENVIROSAFE
Engineers & Consultant Pvt Ltd.


Survey No-1405/06, Mayuri Residency, Shop No-16; 2nd Floor, Sanaswadi, Tal-Shirur, Pune-412208.
Mob+ 9545084620 | E-mail:gesec12@gmail.com | www.greenenvirosafe.co.in
CIN No. : U74900PN2013PTC149666

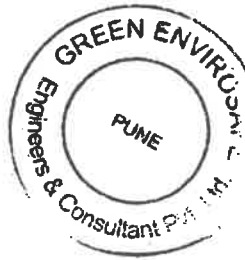
Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

17.	Potassium as K	mg/lit	9.12	10.56	9.41	Not Specified	APHA 3111 B
18.	Calcium as Ca	mg/lit	18.95	13.64	22.55	< 75.00	IS 3025 (Part 40) 1991
19.	Magnesium as Mg	mg/lit	4.27	2.12	5.37	< 30.00	IS 3025 (Part 46) 1994 (RA 2009)
20.	Lead as Pb	mg/lit	BDL	BDL	BDL	<0.01	APHA 3111 B
21.	Manganese as Mn	mg/lit	BDL	BDL	BDL	<0.01	APHA 3111 B
22.	Cadmium as Cd	mg/lit	BDL	BDL	BDL	<0.003	APHA 3111 B
23.	Chromium as Cr	mg/lit	BDL	BDL	BDL	< 0.05	APHA 3111 B
24.	Copper as Cu	mg/lit	BDL	BDL	BDL	< 0.05	APHA 3111 B
25.	Zinc as Zn	mg/lit	BDL	BDL	BDL	<5.00	APHA 3111 B
26.	Iron as Fe	mg/lit	0.03	0.01	0.08	< 0.30	APHA 3111 B
27.	Fluorides as F ⁻	mg/lit	0.07	0.13	BDL	< 1.00	APHA 4500-F D
28.	Mercury as Hg	mg/lit	BDL	BDL	BDL	<0.001	APHA 3111 B
29.	Selenium as Se	mg/lit	BDL	BDL	BDL	<0.01	APHA 3111 B
30.	Arsenic as As	mg/lit	BDL	BDL	BDL	< 0.01	APHA 3111 B
31.	Cyanide as CN	mg/lit	BDL	BDL	BDL	< 0.05	APHA 3111 B
32.	Boron as B	mg/lit	BDL	BDL	BDL	< 0.50	APHA 3111 B

Remark:

> BDL: Below Detection Limit.


Lab Chemist





Authorized Signatory

SURFACE WATER QUALITY

Sr. No.	Parameter	Unit (s)	Location		
			W1 Mine Pit Water	W-2 Shali Nadi Up Stream	W-3 Shali Nadi Down Stream
1.	Odor	--	Un-objectionable	Un-objectionable	Un-objectionable
2.	Taste	--	Agreeable	Agreeable	Agreeable
3.	Color	Hazen	<5.00	<5.00	<5.00
4.	pH	--	7.52	7.57	7.60
5.	Turbidity	NTU	<5.00	<5.00	<5.00
6.	DO	mg/lit	4.10	5.20	5.23
7.	TDS	mg/lit	153.33	163.74	186.53
8.	TSS	mg/lit	10.24	12.53	23.59
9.	BOD:3 days at 27°C	mg/lit	6.45	8.81	13.86
10.	Alkalinity as CaCO ₃	mg/lit	39.34	20.56	45.79
11.	Total Hardness as CaCO ₃	mg/lit	64.97	42.83	78.50
12.	Nitrate as NO ₃	mg/lit	15.58	23.16	17.76
13.	Phosphorous as PO ₄	mg/lit	0.13	0.01	0.95
14.	Chlorides as Cl ⁻	mg/lit	18.26	29.98	45.97
15.	Sulphates as SO ₄	mg/lit	8.15	5.98	9.82
16.	Sodium as Na	mg/lit	1.24	1.75	3.56
17.	Potassium as K	mg/lit	9.12	10.56	9.41
18.	Calcium as Ca	mg/lit	18.95	13.64	22.55
19.	Magnesium as Mg	mg/lit	4.27	2.12	5.37
20.	Lead as Pb	mg/lit	BDL	BDL	BDL
21.	Manganese as Mn	mg/lit	BDL	BDL	BDL
22.	Cadmium as Cd	mg/lit	BDL	BDL	BDL
23.	Chromium as Cr	mg/lit	BDL	BDL	BDL
24.	Copper as Cu	mg/lit	BDL	BDL	BDL
25.	Zinc as Zn	mg/lit	BDL	BDL	BDL
26.	Iron as Fe	mg/lit	0.03	0.01	0.08
27.	Fluorides as F ⁻	mg/lit	0.07	0.13	BDL
28.	Mercury as Hg	mg/lit	BDL	BDL	BDL
29.	Selenium as Se	mg/lit	BDL	BDL	BDL
30.	Arsenic as As	mg/lit	BDL	BDL	BDL
31.	Cyanide as CN	mg/lit	BDL	BDL	BDL
32.	Boron as B	mg/lit	BDL	BDL	BDL

Note:

- mg/l: milligram per liter
- BDL: Below Desirable Limit

Remark:

All the parameters of the surface water samples collected from various sites are well below the desirable limit and maximum permissible limit as per IS: 10500 Standard for Drinking Water.

DHANGARWADI MINES			
Well Depths of Villages			
S.No.	Location	Total Depth in Meters	Water Level From Surface in Meters
1.	Pandapniwadi Village	6.00	1.09
2	Dhangarwadi Village	6.00	2.02

GROUND WATER QUALITY

The most important source of drinking water in the study area is the ground water, which is tapped by a bore well. The buffer zone is good in ground water source. The ground water in the study area gets recharged by rainwater in monsoon season.

Assessment of water quality in the study area and in the mine area includes the quality assessment of parameters as per the Indian Standard IS 10500 (Drinking water standard). A total of 5 locations have selected from buffer zone.



Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Ground Water Analysis Report

Client Name:	Equinox Environments (I) Pvt. Ltd., Kolhapur, Maharashtra.	Report Number	GESEC/PRO/2019-20/08/215-217
Project Name and Address: M/s. Hindalco Industries Limited (Dhangarwadi Bauxite Mine) A/P. Dhangarwadi village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra.		Date of Report	19/8/2019
		Sample Details	Ground Water
		Nature of sample	Liquid
		Date of Sampling	26/07/2019
		Date of Sample Registration	27/07/2019
		Date of Analysis	27/07/2019

Sample Collected and Analyzed by **Green EnviroSafe Engineers & Consultant Pvt. Ltd,
Pune, Maharashtra.**

Sr. No.	Parameter	Unit(s)	Location			Limits as per IS 10500:2012	Analysis Method
			W-4 PANDAPNIW ADI VILLAGE	W-5 THANEWADI VILLAGE	W-6 DHANGARW ADI VILLAGE		
1.	Odor	--	Un-objectionable	Un-objectionable	Un-objectionable	Agreeable	IS : 3025 (Part5):1983,
2.	Taste	--	Agreeable	Agreeable	Agreeable	Agreeable	IS : 3025(Part 7and 8):
3.	Color	Hazen	<5.00	<5.00	<5.00	5.00	IS : 3025 (Part4):1983
4.	pH	--	7.55	7.59	7.61	6.5-8.5	APHA 4500 H ⁺ , A, 23 rd Ed.2017
5.	Turbidity	NTU	<5.00	<5.00	<5.00	< 1.00	IS 3025 (Part 10): 1983
6.	DO	mg/lit	4.15	4.08	4.01	Not Specified	IS 3025 (Part 38)
7.	TDS	mg/lit	119.54	139.01	173.45	< 500.00	IS 3025 (Part 16):
8.	TSS	mg/lit	14.73	21.36	17.91	Not Specified	IS: 3025 (Part-17)-1984
9.	BOD:3 days at 27°C	mg/lit	7.27	9.56	13.15	Not Specified	IS:3025 (Part 44)-1993,
10.	Alkalinity as CaCO ₃	mg/lit	25.56	38.11	41.7	<200	IS:3025 Part-23
11.	Total Hardness as CaCO ₃	mg/lit	56.67	46.66	64.04	< 200.00	IS 3025 (Part 21): 2009
12.	Nitrate as NO ₃	mg/lit	12.31	14.63	22.72	< 45.00	APHA 4500 NO ₃ - B
13.	Phosphorous as PO ₄	mg/lit	BDL	BDL	BDL	Not Specified	APHA 4500 P-C
14.	Chlorides as Cl ⁻	mg/lit	30.63	37.11	48.96	< 250.00	IS 3025 (Part 32):
15.	Sulphates as SO ₄	mg/lit	8.98	9.81	14.95	< 200.00	IS 3025 (Part-24):
16.	Sodium as Na	mg/lit	2.16	1.34	3.75	Not Specified	APHA 3111 B
17.	Potassium as K	mg/lit	12.90	16.85	9.03	Not Specified	APHA 3111 B
18.	Calcium as Ca	mg/lit	20.74	14.56	22.09	< 75.00	IS 3025 (Part 40) 1991
19.	Magnesium as Mg	mg/lit	1.17	2.49	2.14	< 30.00	IS 3025 (Part 46) 1994 (RA 2009)
20.	Lead as Pb	mg/lit	BDL	BDL	BDL	<0.01	APHA 3111 B
21.	Manganese as Mn	mg/lit	BDL	BDL	BDL	<0.01	APHA 3111 B
22.	Cadmium as Cd	mg/lit	BDL	BDL	BDL	<0.003	APHA 3111 B
23.	Chromium as Cr	mg/lit	BDL	BDL	BDL	< 0.05	APHA 3111 B





GREEN ENVIROSAFE
Engineers & Consultant Pvt Ltd.

Survey No-1405/06, Mayuri Residency, Shop No-16, 2nd Floor, Sanaswadi, Tal-Shirur, Pune-412208.
Mob-+ 9545084620 | E-mail:gesec12@gmail.com | www.greenenvirosafe.co.in
CIN No. : U74900PN2013PTC149666

Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

24.	Copper as Cu	mg/lit	BDL	BDL	BDL	< 0.05	APHA 3111 B
25.	Zinc as Zn	mg/lit	BDL	BDL	BDL	<5.00	APHA 3111 B
26.	Iron as Fe	mg/lit	0.01	BDL	0.02	< 0.30	APHA 3111 B
27.	Fluorides as F ⁻	mg/lit	0.08	0.11	0.09	< 1.00	APHA 4500-F ⁻ D
28.	Mercury as Hg	mg/lit	BDL	BDL	BDL	<0.001	APHA 3111 B
29.	Selenium as Se	mg/lit	BDL	BDL	BDL	<0.01	APHA 3111 B
30.	Arsenic as As	mg/lit	BDL	BDL	BDL	< 0.01	APHA 3111 B
31.	Cyanide as CN	mg/lit	BDL	BDL	BDL	< 0.05	APHA 3111 B
32.	Boron as B	mg/lit	BDL	BDL	BDL	< 0.50	APHA 3111 B

Remark:

> **BDL: Below Detection Limit.**

Lab Chemist



Authorized Signatory



Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

Ground Water Analysis Report

Client Name:	Equinox Environments (I) Pvt. Ltd., Kolhapur, Maharashtra.	Report Number	GESEC/PRO/2019- 20/08/222-223
Project Name and Address: M/s. Hindalco Industries Limited (Dhangarwadi Bauxite Mine) A/P. Dhangarwadi village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra.		Date of Report	19/8/2019
		Sample Details	Ground Water
		Nature of sample	Liquid
		Date of Sampling	26/07/2019
		Date of Sample Registration	27/07/2019
		Date of Analysis	27/07/2019
Sample Collected and Analyzed by		Green EnviroSAFE Engineers & Consultant Pvt. Ltd, Pune, Maharashtra.	

Sr. No.	Parameter	Unit(s)	Location		Limits as per IS 10500:2012	Analysis Method
			W-7 PATEWADI VILLAGE	W-8 BHANDAR WADI VILLAGE		
1.	Odor	--	Un-objectionable	Un-objectionable	Agreeable	IS : 3025 (Part5):1983,
2.	Taste	--	Agreeable	Agreeable	Agreeable	IS : 3025(Part 7and 8):
3.	Color	Hazen	<5.00	<5.00	5.00	IS : 3025 (Part4):1983
4.	pH	--	7.51	7.53	6.5-8.5	APHA 4500 H ⁺ , A, 23 rd Ed.2017
5.	Turbidity	NTU	<5.00	<5.00	< 1.00	IS 3025 (Part 10): 1983
6.	DO	mg/lit	4.58	4.44	Not Specified	IS 3025 (Part 38)
7.	TDS	mg/lit	132.32	116.53	< 500.00	IS 3025 (Part 16):
8.	TSS	mg/lit	13.52	19.84	Not Specified	IS: 3025 (Part-17)-1984
9.	BOD:3 days at 27°C	mg/lit	8.96	7.06	Not Specified	IS:3025 (Part 44)-1993,
10.	Alkalinity as CaCO ₃	mg/lit	32.33	24.68	<200	IS:3025 Part-23
11.	Total Hardness as CaCO ₃	mg/lit	70.10	49.56	< 200.00	IS 3025 (Part 21): 2009
12.	Nitrate as NO ₃	mg/lit	17.09	13.68	< 45.00	APHA 4500 NO ₃ - B
13.	Phosphorous as PO ₄	mg/lit	BDL	BDL	Not Specified	APHA 4500 P-C
14.	Chlorides as Cl ⁻	mg/lit	16.05	24.87	< 250.00	IS 3025 (Part 32):
15.	Sulphates as SO ₄	mg/lit	10.98	11.17	< 200.00	IS 3025 (Part-24):
16.	Sodium as Na	mg/lit	0.35	3.08	Not Specified	APHA 3111 B
17.	Potassium as K	mg/lit	21.17	12.36	Not Specified	APHA 3111 B
18.	Calcium as Ca	mg/lit	23.74	16.94	< 75.00	IS 3025 (Part 40) 1991
19.	Magnesium as Mg	mg/lit	2.61	1.75	< 30.00	IS 3025 (Part 46) 1994 (RA 2009)
20.	Lead as Pb	mg/lit	BDL	BDL	<0.01	APHA 3111 B
21.	Manganese as Mn	mg/lit	BDL	BDL	<0.01	APHA 3111 B
22.	Cadmium as Cd	mg/lit	BDL	BDL	<0.003	APHA 3111 B



GREEN ENVIROSAFE
Engineers & Consultant Pvt Ltd.

Survey No-1405/06, Māyuri Residency, Shop No-16, 2nd Floor, Sanaswadi, Tal-Shirur, Pune-412208.
Mob+ 9545084620 | E-mail:gesec12@gmail.com | www.greenenvirosafe.co.in
CIN No. : U74900PN2013PTC149666

Recognised by Ministry of Environment, Forest & Climate Change (MoEF) Govt. of India and ISO/IEC 17025:2005 (NABL), ISO 9001:2015 and OHSAS 18001:2007 Certified Company

23.	Chromium as Cr	mg/lit	BDL	BDL	< 0.05	APHA 3111 B
24.	Copper as Cu	mg/lit	BDL	BDL	< 0.05	APHA 3111 B
25.	Zinc as Zn	mg/lit	BDL	BDL	<5.00	APHA 3111 B
26.	Iron as Fe	mg/lit	BDL	BDL	< 0.30	APHA 3111 B
27.	Fluorides as F ⁻	mg/lit	BDL	BDL	< 1.00	APHA 4500-F ⁻ D
28.	Mercury as Hg	mg/lit	BDL	BDL	<0.001	APHA 3111 B
29.	Selenium as Se	mg/lit	BDL	BDL	<0.01	APHA 3111 B
30.	Arsenic as As	mg/lit	BDL	BDL	< 0.01	APHA 3111 B
31.	Cyanide as CN	mg/lit	BDL	BDL	< 0.05	APHA 3111 B
32.	Boron as B	mg/lit	BDL	BDL	< 0.50	APHA 3111 B

Remark:

> **BDL: Below Detection Limit.**

Lab Chemist

Authorized Signatory

GROUND WATER QUALITY

Sr. No.	Parameter	Unit (s)	Location				
			W-4 PANDAPNIW ADI VILLAGE	W-5 THANEWADI VILLAGE	W-6 DHANGARWA DI VILLAGE	W-7 PATEWADI VILLAGE	W-8 BHANDAR WADI VILLAGE
1.	Odor	—	Un-objectionable	Un-objectionable	Un-objectionable	Un-objectionable	Un-objectionable
2.	Taste	—	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3.	Color	Hazen	<5.00	<5.00	<5.00	<5.00	<5.00
4.	pH	—	7.55	7.59	7.61	7.51	7.53
5.	Turbidity	NTU	<5.00	<5.00	<5.00	<5.00	<5.00
6.	DO	mg/lit	4.15	4.08	4.01	4.58	4.44
7.	TDS	mg/lit	119.54	139.01	173.45	132.32	116.53
8.	TSS	mg/lit	14.73	21.36	17.91	13.52	19.84
9.	BOD:3 days at 27°C	mg/lit	7.27	9.56	13.15	8.96	7.06
10.	Alkalinity as CaCO ₃	mg/lit	25.56	38.11	41.7	32.33	24.68
11.	Total Hardness as CaCO ₃	mg/lit	56.67	46.66	64.04	70.10	49.56
12.	Nitrate as NO ₃	mg/lit	12.31	14.63	22.72	17.09	13.68
13.	Phosphorous as PO ₄	mg/lit	BDL	BDL	BDL	BDL	BDL
14.	Chlorides as Cl ⁻	mg/lit	30.63	37.11	48.96	16.05	24.87
15.	Sulphates as SO ₄	mg/lit	8.98	9.81	14.95	10.98	11.17
16.	Sodium as Na	mg/lit	2.16	1.34	3.75	0.35	3.08
17.	Potassium as K	mg/lit	12.90	16.85	9.03	21.17	12.36
18.	Calcium as Ca	mg/lit	20.74	14.56	22.09	23.74	16.94
19.	Magnesium as Mg	mg/lit	1.17	2.49	2.14	2.61	1.75
20.	Lead as Pb	mg/lit	BDL	BDL	BDL	BDL	BDL
21.	Manganese as Mn	mg/lit	BDL	BDL	BDL	BDL	BDL
22.	Cadmium as Cd	mg/lit	BDL	BDL	BDL	BDL	BDL
23.	Chromium as Cr	mg/lit	BDL	BDL	BDL	BDL	BDL
24.	Copper as Cu	mg/lit	BDL	BDL	BDL	BDL	BDL
25.	Zinc as Zn	mg/lit	BDL	BDL	BDL	BDL	BDL
26.	Iron as Fe	mg/lit	0.01	BDL	0.02	BDL	BDL
27.	Fluorides as F ⁻	mg/lit	0.08	0.11	0.09	BDL	BDL
28.	Mercury as Hg	mg/lit	BDL	BDL	BDL	BDL	BDL
29.	Selenium as Se	mg/lit	BDL	BDL	BDL	BDL	BDL
30.	Arsenic as As	mg/lit	BDL	BDL	BDL	BDL	BDL
31.	Cyanide as CN	mg/lit	BDL	BDL	BDL	BDL	BDL
32.	Boron as B	mg/lit	BDL	BDL	BDL	BDL	BDL

Note:

- mg/l: milligram per liter
- BDL: Below Desirable Limit

Remark:

All the parameters of the surface water samples collected from various sites are well below the desirable limit and maximum permissible limit as per IS: 10500 Standard for Drinking Water.

Indian Standard

DRINKING WATER — SPECIFICATION

(*Second Revision*)

1 SCOPE

This standard prescribes the requirements and the methods of sampling and test for drinking water.

2 REFERENCES

The standards listed in Annex A contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in Annex A.

3 TERMINOLOGY

For the purpose of this standard the following definition shall apply.

3.1 Drinking Water — Drinking water is water intended for human consumption for drinking and cooking purposes from any source. It includes water (treated or untreated) supplied by any means for human consumption.

4 REQUIREMENTS

Drinking water shall comply with the requirements given in Tables 1 to 4. The analysis of pesticide residues given in Table 3 shall be conducted by a recognized laboratory using internationally established test method meeting the residue limits as given in Table 5.

Drinking water shall also comply with bacteriological requirements (*see 4.1*), virological requirements (*see 4.2*) and biological requirements (*see 4.3*).

4.1 Bacteriological Requirements**4.1.1 Water in Distribution System**

Ideally, all samples taken from the distribution system including consumers' premises, should be free from coliform organisms and the following bacteriological quality of drinking water collected in the distribution system, as given in Table 6 is, therefore specified when tested in accordance with IS 1622.

4.2 Virological Requirements

4.2.1 Ideally, all samples taken from the distribution

Table 1 Organoleptic and Physical Parameters
(Foreword and Clause 4)

SI No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to Part of IS 3025	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Colour, Hazen units, <i>Max</i>	5	15	Part 4	Extended to 15 only, if toxic substances are not suspected in absence of alternate sources
ii)	Odour	Agreeable	Agreeable	Part 5	a) Test cold and when heated b) Test at several dilutions
iii)	pH value	6.5-8.5	No relaxation	Part 11	—
iv)	Taste	Agreeable	Agreeable	Parts 7 and 8	Test to be conducted only after safety has been established
v)	Turbidity, NTU, <i>Max</i>	1	5	Part 10	—
vi)	Total dissolved solids, mg/l, <i>Max</i>	500	2 000	Part 16	—

NOTE — It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limits indicated under 'permissible limit in the absence of alternate source' in col 4, above which the sources will have to be rejected.

Table 2 General Parameters Concerning Substances Undesirable in Excessive Amounts
(Foreword and Clause 4)

Sl No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Aluminium (as Al), mg/l, <i>Max</i>	0.03	0.2	IS 3025 (Part 55)	—
ii)	Ammonia (as total ammonia-N), mg/l, <i>Max</i>	0.5	No relaxation	IS 3025 (Part 34)	—
iii)	Anionic detergents (as MBAS) mg/l, <i>Max</i>	0.2	1.0	Annex K of IS 13428	—
iv)	Barium (as Ba), mg/l, <i>Max</i>	0.7	No relaxation	Annex F of IS 13428* or IS 15302	—
v)	Boron (as B), mg/l, <i>Max</i>	0.5	1.0	IS 3025 (Part 57)	—
vi)	Calcium (as Ca), mg/l, <i>Max</i>	75	200	IS 3025 (Part 40)	—
vii)	Chloramines (as Cl ₂), mg/l, <i>Max</i>	4.0	No relaxation	IS 3025 (Part 26)* or APHA 4500-Cl G	—
viii)	Chloride (as Cl), mg/l, <i>Max</i>	250	1 000	IS 3025 (Part 32)	—
ix)	Copper (as Cu), mg/l, <i>Max</i>	0.05	1.5	IS 3025 (Part 42)	—
x)	Fluoride (as F) mg/l, <i>Max</i>	1.0	1.5	IS 3025 (Part 60)	—
xi)	Free residual chlorine, mg/l, <i>Min</i>	0.2	1	IS 3025 (Part 26)	To be applicable only when water is chlorinated. Tested at consumer end. When pro- tection against viral infec- tion is required, it should be minimum 0.5 mg/l
xii)	Iron (as Fe), mg/l, <i>Max</i>	0.3	No relaxation	IS 3025 (Part 53)	Total concentration of man- ganese (as Mn) and iron (as Fe) shall not exceed 0.3 mg/l
xiii)	Magnesium (as Mg), mg/l, <i>Max</i>	30	100	IS 3025 (Part 46)	—
xiv)	Manganese (as Mn), mg/l, <i>Max</i>	0.1	0.3	IS 3025 (Part 59)	Total concentration of man- ganese (as Mn) and iron (as Fe) shall not exceed 0.3 mg/l
xv)	Mineral oil, mg/l, <i>Max</i>	0.5	No relaxation	Clause 6 of IS 3025 (Part 39) Infrared partition method	—
xvi)	Nitrate (as NO ₃), mg/l, <i>Max</i>	45	No relaxation	IS 3025 (Part 34)	—
xvii)	Phenolic compounds (as C ₆ H ₅ OH), mg/l, <i>Max</i>	0.001	0.002	IS 3025 (Part 43)	—
xviii)	Selenium (as Se), mg/l, <i>Max</i>	0.01	No relaxation	IS 3025 (Part 56) or IS 15303*	—
xix)	Silver (as Ag), mg/l, <i>Max</i>	0.1	No relaxation	Annex J of IS 13428	—
xx)	Sulphate (as SO ₄) mg/l, <i>Max</i>	200	400	IS 3025 (Part 24)	May be extended to 400 pro- vided that Magnesium does not exceed 30
xxi)	Sulphide (as H ₂ S), mg/l, <i>Max</i>	0.05	No relaxation	IS 3025 (Part 29)	—
xxii)	Total alkalinity as calcium carbonate, mg/l, <i>Max</i>	200	600	IS 3025 (Part 23)	—
xxiii)	Total hardness (as CaCO ₃), mg/l, <i>Max</i>	200	600	IS 3025 (Part 21)	—
xxiv)	Zinc (as Zn), mg/l, <i>Max</i>	5	15	IS 3025 (Part 49)	—

NOTES

1 In case of dispute, the method indicated by '*' shall be the referee method.

2 It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limits indicated under 'permissible limit in the absence of alternate source' in col 4, above which the sources will have to be rejected.

Table 3 Parameters Concerning Toxic Substances
(Foreword and Clause 4)

SI No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Cadmium (as Cd), mg/l, <i>Max</i>	0.003	No relaxation	IS 3025 (Part 41)	—
ii)	Cyanide (as CN), mg/l, <i>Max</i>	0.05	No relaxation	IS 3025 (Part 27)	—
iii)	Lead (as Pb), mg/l, <i>Max</i>	0.01	No relaxation	IS 3025 (Part 47)	—
iv)	Mercury (as Hg), mg/l, <i>Max</i>	0.001	No relaxation	IS 3025 (Part 48) Mercury analyser	—
v)	Molybdenum (as Mo), mg/l, <i>Max</i>	0.07	No relaxation	IS 3025 (Part 2)	—
vi)	Nickel (as Ni), mg/l, <i>Max</i>	0.02	No relaxation	IS 3025 (Part 54)	—
vii)	Pesticides, µg/l, <i>Max</i>	See Table 5	No relaxation	See Table 5	—
viii)	Polychlorinated biphenyls, mg/l, <i>Max</i>	0.000 5	No relaxation	ASTM 5175*	— or APHA 6630
ix)	Polynuclear aromatic hydro- carbons (as PAH), mg/l, <i>Max</i>	0,000 1	No relaxation	APHA 6440	—
x)	Total arsenic (as As), mg/l, <i>Max</i>	0.01	0.05	IS 3025 (Part 37)	—
xi)	Total chromium (as Cr), mg/l, <i>Max</i>	0.05	No relaxation	IS 3025 (Part 52)	—
xii)	Trihalomethanes:				
a)	Bromoform, mg/l, <i>Max</i>	0.1	No relaxation	ASTM D 3973-85* or APHA 6232	—
b)	Dibromochloromethane, mg/l, <i>Max</i>	0.1	No relaxation	ASTM D 3973-85* or APHA 6232	—
c)	Bromodichloromethane, mg/l, <i>Max</i>	0.06	No relaxation	ASTM D 3973-85* or APHA 6232	—
d)	Chloroform, mg/l, <i>Max</i>	0.2	No relaxation	ASTM D 3973-85* or APHA 6232	—

NOTES

1 In case of dispute, the method indicated by '*' shall be the referee method.

2 It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limits indicated under 'permissible limit in the absence of alternate source' in col 4, above which the sources will have to be rejected.

Table 4 Parameters Concerning Radioactive Substances
(Foreword and Clause 4)

SI No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to Part of IS 14194	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Radioactive materials:				
a)	Alpha emitters Bq/l, <i>Max</i>	0.1	No relaxation	Part 2	—
b)	Beta emitters Bq/l, <i>Max</i>	1.0	No relaxation	Part 1	—

NOTE — It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limits indicated under 'permissible limit in the absence of alternate source' in col 4, above which the sources will have to be rejected.

Table 5 Pesticide Residues Limits and Test Method
(Foreword and Table 3)

Sl No.	Pesticide	Limit µg/l	Method of Test, Ref to	
			USEPA (4)	AOAC/ ISO (5)
(1)	(2)	(3)	(4)	(5)
i)	Alachlor	20	525.2, 507	—
ii)	Atrazine	2	525.2, 8141 A	—
iii)	Aldrin/ Dieldrin	0.03	508	—
iv)	Alpha HCH	0.01	508	—
v)	Beta HCH	0.04	508	—
vi)	Butachlor	125	525.2, 8141 A	—
vii)	Chlorpyrifos	30	525.2, 8141 A	—
viii)	Delta HCH	0.04	508	—
ix)	2,4- Dichlorophenoxyacetic acid	30	515.1	—
x)	DDT (<i>o, p</i> and <i>p, p</i> - Isomers of DDT, DDE and DDD)	1	508	AOAC 990.06
xi)	Endosulfan (alpha, beta, and sulphate)	0.4	508	AOAC 990.06
xii)	Ethion	3	1657 A	—
xiii)	Gamma — HCH (Lindane)	2	508	AOAC 990.06
xiv)	Isoproturon	9	532	—
xv)	Malathion	190	8141 A	—
xvi)	Methyl parathion	0.3	8141 A	ISO 10695
xvii)	Monocrotophos	1	8141 A	—
xviii)	Phorate	2	8141 A	—

NOTE — Test methods are for guidance and reference for testing laboratory. In case of two methods, USEPA method shall be the reference method.

Table 6 Bacteriological Quality of Drinking Water¹⁾
(Clause 4.1.1)




Sl No.	Organisms	Requirements
(1)	(2)	(3)
i)	<i>All water intended for drinking:</i>	
	a) <i>E. coli</i> or thermotolerant coliform bacteria ^{2), 3)}	Shall not be detectable in any 100 ml sample
ii)	<i>Treated water entering the distribution system:</i>	
	a) <i>E. coli</i> or thermotolerant coliform bacteria ²⁾	Shall not be detectable in any 100 ml sample
	b) Total coliform bacteria	Shall not be detectable in any 100 ml sample
iii)	<i>Treated water in the distribution system:</i>	
	a) <i>E. coli</i> or thermotolerant coliform bacteria	Shall not be detectable in any 100 ml sample
	b) Total coliform bacteria	Shall not be detectable in any 100 ml sample

¹⁾Immediate investigative action shall be taken if either *E. coli* or total coliform bacteria are detected. The minimum action in the case of total coliform bacteria is repeat sampling; if these bacteria are detected in the repeat sample, the cause shall be determined by immediate further investigation.

²⁾Although, *E. coli* is the more precise indicator of faecal pollution, the count of thermotolerant coliform bacteria is an acceptable alternative. If necessary, proper confirmatory tests shall be carried out. Total coliform bacteria are not acceptable indicators of the sanitary quality of rural water supplies, particularly in tropical areas where many bacteria of no sanitary significance occur in almost all untreated supplies.

³⁾It is recognized that, in the great majority of rural water supplies in developing countries, faecal contamination is widespread. Under these conditions, the national surveillance agency should set medium-term targets for progressive improvement of water supplies.

Domestic Effluent Analysis Report

Report No: GESEC/PRO/2019-20/08/221		Date of Report		19/08/2019	
Name of Client		Equinox Environments (I) Pvt. Ltd., Kolhapur, Maharashtra.			
Project Name and Address M/s. Hindalco Industries Limited, (Dhangarwadi Bauxite Mine), A/P. Dhangarwadi Village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra.		Sample Location		Canteen waste water	
		Nature of sample		Liquid	
		Date of sampling		25/07/2019	
		Date of Sample Registration		26/07/2019	
		Date of Analysis		26/07/2019	
Sample Collected By		Green Envirosafe Engineers & Consultant Pvt. Ltd, Pune, Maharashtra.			
Domestic Effluent Analysis					
Sr. No.	Parameter	Result	MPCB Limits	Unit(s)	Standard Method
1.	Total Suspended Solids	47.12	100	mg/l	APHA 2540-D
2.	Total Dissolved Solids	746.27	2100	mg/l	APHA 2540-C
3.	COD	42.15	250	mg/l	APHA 5220 B
4.	BOD for 3 days at 27°C	18.96	100	mg/l	APHA 5210 B
5.	Total Solids	793.39	—	mg/l	APHA 2540-D
6.	Oil and Grease	<5.00	10	mg/l	APHA 5520 B
ANALYZED BY-		AUTHORIZED SIGNATORY			
					

Terms and conditions

- The report is refer only to the sample tested and not applies to the bulk.
- The results shown in this test report may differ based on various factors including temperature, humidity, pressure, retention time etc.
- The test report cannot be reproduced wholly or in part and cannot be used for promotional or publicity purpose without the written consent of laboratory, GESEC.
- Samples will be retained for a period of seven (7) days after completion of analysis. Longer retention periods can be arranged, on request of the customer.
- We strictly maintain the confidentiality of all test result of sample(s) collected by us/ supplied by customer and not revel to third party unless required by the statutory or legal requirement.
- MoEF approved Lab by Govt. of India. From date. 09/02/2017 to 08/02/2022.

Domestic Effluent Analysis Report

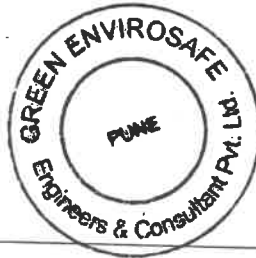
Report No: GESEC/PRO/2019-20/08/224	Date of Report	26/08/2019
Name of Client	Equinox Environments (I) Pvt. Ltd., Kolhapur, Maharashtra.	
Project Name and Address M/s. Hindalco Industries Limited, (Dhangarwadi Bauxite Mine), A/P. Dhangarwadi Village, Tahsil. Shahuwadi, District. Kolhapur, State. Maharashtra.	Sample Location	Canteen waste water
	Nature of sample	Liquid
	Date of sampling	19/08/2019
	Date of Sample Registration	20/08/2019
	Date of Analysis	20/08/2019
Sample Collected By	Green Envirosafe Engineers & Consultant Pvt. Ltd, Pune, Maharashtra.	

Domestic Effluent Analysis

Sr. No.	Parameter	Result	MPCB Limits	Unit(s)	Standard Method
1.	Total Suspended Solids	52.13	100	mg/l	APHA 2540-D
2.	Total Dissolved Solids	781.45	2100	mg/l	APHA 2540-C
3.	COD	48.92	250	mg/l	APHA 5220 B
4.	BOD for 3 days at 27°C	20.20	100	mg/l	APHA 5210 B
5.	Total Solids	833.58	-----	mg/l	APHA 2540-D
6.	Oil and Grease	<5.00	10	mg/l	APHA 5520 B

ANALYZED BY-

(Signature)



AUTHORIZED SIGNATORY

(Signature)

Terms and conditions

- The report is refer only to the sample tested and not applies to the bulk.
- The results shown in this test report may differ based on various factors including temperature, humidity, pressure, retention time etc.
- The test report cannot be reproduced wholly or in part and cannot be used for promotional or publicity purpose without the written consent of laboratory, GESEC.
- Samples will be retained for a period of seven (7) days after completion of analysis. Longer retention periods can be arranged, on request of the customer.
- We strictly maintain the confidentiality of all test result of sample(s) collected by us/ supplied by customer and not revel to third party unless required by the statutory or legal requirement.
- MoEF approved Lab by Govt. of India. From date. 09/02/2017 to 08/02/2022.

DOMESTIC EFFLUENT ANALYSIS

There is only source of waste water on site is canteen effluent. All the employees daily have their two meals in this canteen according to their shifts. Sample was collected two times from outlet and analyzed. Results are given below.

DOMESTIC EFFLUENT ANALYSIS

Sample Location: Canteen water waste

Date of Sampling: 26/07/2019

Sr. No	Unit	Parameter	Result	MPCB Standards
1	mg/l	Total Suspended Solids	47.12	100
2	mg/l	Total Dissolved Solids	746.27	2100
3	mg/l	COD	42.15	250
4	mg/l	BOD for 3 days at 27°C	18.96	100
5	mg/l	Total Solids	793.39	---
6	mg/l	Oil and Grease	<5.00	10

Sample location: Canteen water waste

Date of Sampling: 19/08/2019

Sr. No	Unit	Parameter	Result	MPCB Standards
1	mg/l	Total Suspended Solids	52.13	100
2	mg/l	Total Dissolved Solids	781.45	2100
3	mg/l	COD	48.92	250
4	mg/l	BOD for 3 days at 27°C	20.20	100
5	mg/l	Total Solids	833.58	---
6	mg/l	Oil and Grease	<5.00	10