



Ref No: HIL/LHD/VP (M)/MoEF/ 630

Date : 28.11.12

To,
Mr S Kerketta
Joint Director(S)
MoEF ,GOI, Eastern Regional Office
A/3,Chandrashekharapur,
Bhubaneshwar- 751023 (Orissa)

Sub: **Compliance Report of EC conditions for Gurdari (584.19 ha) Bauxite Mining project of M/s Hindalco located in Gumla, Jharkhand for the period April' 2012 - Sep' 2012.**

Ref: **Environmental Clearance letter no J-11015/136/2006-IA II(M) dated 7th February 2007**


Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Gurdari (584.19 ha)Bauxite Mining project of M/s Hindalco located in Gumla, Jharkhand for the period April' 2012 - Sep' 2012.**

Hope you will find the same in order.

Thanking You

Yours Sincerely
FOR HINDALCO INDUSTRIES LIMITED


(Bijesh Kumar Jha)
VP (Mines)

Enclosure: - As Above

Compliance of conditions laid down in Environmental Clearance

GURDARI BAUXITE MINES

Period : April'12 - Sep'12

J-11015/136/2006-IA.II (M) dated 7.2.2007

Sl No	Conditions	Compliance Status
Specific Conditions		
1	All the conditions stipulated by SPCB in their NOC shall be effectively implemented.	Complied.
2	The environmental clearance is subject to approval of the state land use Department, Government of Jharkhand for diversion of agricultural land for non-agricultural use.	Mining Lease is granted / renewed by the State Govt. after due consideration & cabinet approval on recommendation of D.C. who are competent authority for diversion of agricultural land for non-agricultural use. (copy already submitted to your office)
3	The exploration shall be completed within 2.5 years and thereafter the proponent shall come up with a firm proposal for mining, based on the estimated reserves. The reclamation plan, post mine land use and progressive greenbelt development plan shall also be prepared and submitted with the revised proposal.	Mining is in progress.
4	Mining shall not intersect groundwater. The mine working shall be restricted to ground water table. Prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for mining below water table.	Presently the maximum depth of mining is 15 m. As per the survey, the ground water table is at 45-60 m below ground level. Hence there will be no intersecting of the ground water table due to mining activities.
5	Top soil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.	Sequential backfilling and reclamation of the mined out area are being exercised. Topsoil is being spread on backfilled area for reclamation of the area.
6	The waste generated shall be concurrently backfilled in the mined out area. There shall be no external OB dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six month basis.	Overburden and waste rock are being used for back filling. Data pertaining to backfilling is enclosed as Annexure

7	<p>Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after monsoon and maintained properly.</p> <p>Garland drain (size, gradient and length) shall be constructed for mine pit and sump capacity should 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 should also provide adequate retention period to allow proper setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.</p>	<p>No run off is being generated from mining activities. However, to collect and manage rainwater during monsoon drains and Pit sumps are made, part of mined out area is used as settling tank. Settled water is being used for sprinkling of quarry, roads, green belt development, etc.</p>
8	<p>Plantation shall be raised in an area of 78.44 ha including a green belt of adequate width by planting the native species around the ML area, roads, reclaimed area etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 1500 plants per ha.</p>	<p>In 2012, we have planted on 3.5 acre (Planted 4000 saplings) reclaimed area. Rest to be complied during project period.</p>
9	<p>The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.</p>	<p>A plan is drawn on the basis of discussions with Scientists of State unit office of Central Ground Water Board, Ranchi to implement suitable conservation measures to augment ground water resources in the area and is also submitted to the Regional Director, Central Ground Water Board, Patna, for his further suggestions. Recommendation of CGWB shall be implemented to augment the ground water resources of the area. Copy of letter already submitted</p>
10	<p>Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should 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>	<p>It is being monitored. Monitoring report is enclosed as Annexure</p>

11	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	Rainwater harvested during rainy season is being used for sprinkling on haul roads and raising plantation. Spring water is drawn from the down the hill pockets ponds for drinking purposes. Hence, as per the terms and conditions in Part III, Clause 6 of Mining lease deed, we have obtained permission from the Deputy Commissioner for drawl of water from the surface water bodies.
12	Water monitoring both for quality and quantity shall be carried out at four locations namely one spring and three streams. Six monthly report should be submitted to the Ministry of Environment and Forest and its Regional Office located at Bhubneshwar.	Analysis of water quality is being carried out. Analysis data for period of reporting is enclosed in Annexure
13	Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded.	To keep vehicular emissions in control, company vehicles are periodically checked and repaired as and when required. All the transporters have been instructed to obtain PUC for their vehicles from the competent authority and submit to the concerned officer for verification
14	Drills should either be operated with dust extractors or should be equipped with water injection system.	Drilling is done with water pouring in the drill holes intermittently for dust suppression and is the best method for Jackhammer Drilling.
15	Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibration and to arrest fly rocks and boulders should be implemented.	Blasting at Mines is done at fixed blasting period i.e. 12.00 Noon to 1.00 PM on working days. Mobile mining activities are not being practiced during blasting. All the precautionary and mitigative measures to control ground vibration and to arrest fly rocks is being exercised.
16	Consent to operate should be obtained from SPCB prior to start of enhanced production from the mine.	Has been obtained and enclosed in Annexure
17	Sewage treatment plant should be installed for the colony. ETP should also be provided for workshop and wastewater generated from mining operations.	There is no effluent from mine, hence ETP has not been installed. The sewage water from domestic uses is being collected through individual Septic Tank and Soak Pits.

18	The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Indian Python, <i>Presbytis phayrei</i> , <i>Melurus ursinus</i> etc. Spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. Copy of action plan may be submitted to the Ministry and its Regional Office within 3 months.	Action plan for conservation of flora and fauna spotted in the study area was prepared after due consultation with the local DFO and a copy of the same has already been submitted to the DFO for his comments, any suggestion and modification. On receipt of the same after vetting of State Forest Department, the action plan will be submitted to the MoEF
19	A Final Mine Closure plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forest 5 years in advance of final mine closure for approval.	Progressive Mine Closure Plan duly approved by Indian Bureau of Mines is available with us. The same has already been informed to Regional Office, MoEF.

GENERAL CONDITIONS

Sl No	Conditions	Compliance Status
1	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forest	Being Complied. Prior approval will be sought for, if any change is proposed.
2	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.	Excavation of Over Burden and Bauxite is being done as per the approved calendar plan.
3	Four ambient air quality-monitoring station should be established in the core zone as well as in the buffer zone for RPM, SPM, SO ₂ , NO _x monitoring. Location of the stations should be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	Monitoring Reports is enclosed as Annexure .
4	Data on ambient air quality (RPM, SPM, SO ₂ , NO _x) should be regularly submitted to the Ministry including its Regional office located at Bhubneshwar and the State Pollution Control Board / Central pollution Control Board once in six months.	Monitoring Reports for reporting period is enclosed in Annexure .

5	Fugitive dust emission from all the sources should be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points should be provided and properly maintained.	Two nos. of water tanker have been provided for sprinkling of water on haul roads and active mining areas to contain fugitive dust. Water spraying at loading, unloading, etc is also being done manually.
6	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operation of HEMM, etc. should be provided with ear plug / muffs.	Noise monitoring is being done regularly. Workers engaged in operation of HEMMs, etc have also been provided with PPEs such as ear plug and ear muffs. Monitoring of noise level is being conducted at various locations of the work zone area and a monitoring report for the period of reporting six monthly compliance is enclosed.
7	Industrial waste water (workshops and waste water from the mine) Should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May, 1993 and 31 st December,1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	There is no effluent discharge from Mine. Workshop has an Oil Catchment Pit to trap oil and grease. It is being ensured to make it operational and effective as and when required and accordingly the O&M department is taking its due care.
8	Personnel working in dusty areas should wear protective respiratory devices and they should also provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Complied. Use of Personal Protective Equipment (PPE) by the individuals is being ensured. All the mine workers are being regularly and periodically sent to our own hospital for health checkup/ Occupational Health check up for any contraction of diseases due to exposure in dusty and noisy areas. Training on safety, health and environmental aspects of mining is being regularly imparted through VT training centre and also through various other training programmes conducted by the State Government, recognized agencies, etc.
9	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.	Separate Environmental Management Cell (EMC) has been constituted and is functioning effectively. Copy already submitted
10	The project authorities should inform to the Regional Office located at Bhubneshwar 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. The mine is an old and working since 1976.
11	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other	Statement of budgetary provision and actual expenses for the year 2011-12 for environmental protection measure is enclosed. It is once again

	purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubneshwar.	reiterated that the funds so ear marked shall not be diverted for any other purposes other than it is committed at the beginning of the financial year. (Annexure).
12	The Regional Office of this Ministry located at Bhubneshwar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	Complied.
13	A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.	Complied .Copy submitted to regional office.
14	State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Center and Collector's office / Tehsildar's Office for 30 days.	Not Applicable .
15	The project authorities should advertise at least in two local newspapers widely circulated, one of which locality concerned, within 7days 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 should be forwarded to the Regional Office of this Ministry located Bhubneshwar.	Complied. Copies, of the advertisement made in the local newspapers, have already been submitted to the Regional Office Vide letter no HIL/GMO(M)/ENV/140 Dated 23.04.2007.



झारखण्ड राज्य प्रदूषण नियंत्रण पर्वद-

JHARKHAND STATE POLLUTION CONTROL BOARD
[CONSTITUTED UNDER SECTION 4 OF THE WATER (PREVENTION & CONTROL OF POLLUTION ACT, 1974)
T.A.DIVISION BUILDING (GROUND FLOOR),HEC COMPEX, DHURWA, RANCHI-834004.
Phone No:-0651- 2400852, 2400851, Fax No:- 2400850.

Ref.No. PC/RNC/83/07 / 6.807

Dated- 17/4/12

CONSENT TO OPERATE

With reference to the application dated 30.09.2012 of G.M. (Operation), M/s Hindalco Industries Ltd; Court Road, P.O.+ Dist Lohardaga, Gurdari Bauxite Mines, 584.19 hac for consent under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and that under section 21 of the Air (Prevention & Control of Pollution) Act,1981, he (they) is (are) granted consent to bring into use his(their) new/altered/existing outlet(s) for discharge of trade effluent and (or) domestic sewage and to operate his (their) industrial plant to produce maximum 3.25 MTPA of Bauxite ore At- Gurdari, P.O + Dist- Lohardaga for the period from 01.01.2012 to 31.12.2012 with the following conditions :

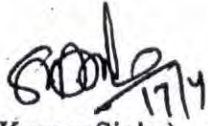
1. That, he(they) shall make any alteration, addition, deletion or modification in the ^{pl}plant ^{min}mine without the prior clearance from the Board.
2. That, he(they) shall abide by the obligations provided under section 24, 31 and 33A of the Water (Prevention & Control of Pollution) Act, 1974 and shall extend co-operation to the Board in performing its functions entrusted under section 20, 21, 23, 30 and 32 of the Act.
3. That, he(they) shall comply with the requirements of the Water (Prevention & Control of Pollution) Cess Act, 1977 read with the Water (Prevention & Control of Pollution) Cess Rules, 1978.
4. That, he(they) shall abide by the obligations provided under section 22, 23 and 31A of the Air (Prevention & Control of Pollution) Act, 1981 and shall extend co-operation to the Board in performing its functions entrusted under sections 24, 25 and 26 of the Act.
5. That, he(they) shall abide by the obligations provided under sections 5, 7, 8 and 9 of the Environment (Protection) Act, 1986 and shall extend co-operation in performing the functions entrusted under section 3, 10 and 11 of the Act.
6. That, he(they) shall abide by the applicable provisions of the Environment (Protection) Rules, 1986, the Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2008; the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989; the Bio-medical Waste (Management & Handling) Rules, 1998; the Municipal Solid Wastes (Management & Handling) Rules, 2000 and the Batteries (Management & Handling) Rules, 2001.
7. That, he(they) shall maintain the quality of discharge and (or) emission and (or) noise level of environmental pollutants in conformity with the standards as laid under Rule 3 of the Environment (Protection) Rules, 1986.

Xess/Con/75

8. That, he(they) shall monitor his(their) effluent(s), emission(s) and the ambient air, noise level regularly and shall submit the report to the Board in compliance of the condition laid in paragraph 7.
9. That, he(they) shall establish well equipped environmental laboratory with the facilities of system(s) of continuous monitoring of effluent(s), emission(s) ambient water quality(ies), ambient air quality(ies) and ambient noise level(s) and transferring them (monitoring results) to his(their) website(s) and to the e-mail address(es) of the key persons of Jharkhand State Pollution Control Board, Zonal Office, Kolkata and Ministry of Environment & Forests, Regional Office, Bhubneshwar with simultaneous displaying at prominent locations in front of his(their)premises. [*Unit(s) of medium and large scale under 17 categories of polluting industries of category A of EIA Notification, 2006.]
10. That, he(they) shall submit the environmental statement every year by 30th September and shall harvest all rain water precipitating in the premises and do three tier tree plantation in the premises as air barrier.
11. That, he(they) shall submit application for consent under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and that under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 again 120 days before the expiration of the consent order 31.12.2012 or within 120 days from the date of receipt of the order, whichever is earlier.
12. *That, unit shall submit quality report of Ambient Air Quality and Ground Water Quality every quarter of the year.*
13. *That, the unit shall submit the status of compliance Environmental Clearance every quarter to the Board*
14. *That the unit shall reclaim the mined out area in phased manner as per EIA/EMP report.*
15. *That the unit shall implement harvest rain water of the mine and recharge it to the ground by the method of Central Ground Water Board Guideline that fits most to the mine .*
16. *That, the unit shall make arrangement to control the fugitive emissions occurring during the mining activities and plying of vehicles on haul as well as transport road;*
17. *That, the unit shall ensure that no transport vehicle should ply on road without covering the materials;*

To,

M/s Hindalco Industries Ltd;
(I/C Gurdari Bauxite Mines)
Court Road, P.O. + Dist- Lohardaga.


(Sanjay Kumar Sinha)
Member Secretary.





TEST REPORT

Report No. : CA:GL:3120010719

Date : 19.07.2012

JOE No 1212804732

Report Control No 3125010860

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

SAMPLE DESCRIPTION	MEASUREMENT OF NOISE LEVEL
COMPANY NAME	M/S. HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS	MINES DIVISION, LOHARDAGA, JHARKHAND, PIN – 835 302
SAMPLING SITE	GURDARI/KUJAM-II/AMTIPANI/KUJAM-I/BAUXITE MINES(NETERHAT PLATEAU)
PROTOCOL	GENSOP/CALLAB/116
DATE OF SAMPLING	09.07.2012 TO 10.07.2012
TEST START DATE	19.07.2012
TEST END DATE	19.07.2012

LOCATION	RESULT		LIMIT IN dB(A) Leq (INDUSTRIAL AREA)	
	Day Time (L _{eq}) in dB(A)	Night time (L _{eq}) in dB(A)	Day Time	Night time
MINE LEASE AREA (NEAR GURDARI OFFICE)	62	54	75	70

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

- Note: (i) The value is the Leq of One Hundred Sixty-nine readings taken in day time and seventy reading taken in night time.
(ii) Day time shall mean from 6:00 am to 10:00 pm
(iii) Night time shall mean from 10:00 pm to 6:00 am

Checked by

Dipankar De Sarkar
Dipankar De Sarkar
Asst. Manager (Operations)

per pro SGS India Private Ltd.

Dr. Nimai Ghosh
Dr. Nimai Ghosh
Manager-Laboratory

Page 1 of 1

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TEST REPORT

Report No. : CA:GL:3120010815-18

Date : 23.07.2012

JOF No. 1212804776

Report Control No. 3125011119-22

SAMPLE DRAWN BY SGS INDIA PRIVATE LTD.

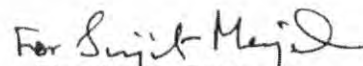
SAMPLE DESCRIPTION : MEASUREMENT OF NOISE LEVEL
NAME OF THE CLIENT : M/S. HINDALCO INDUSTRIES LIMITED
ADDRESS : MINES DIVISION, LOHARDAGA, JHARKHAND, PIN - 835 302
SAMPLING METHOD : INSTRUMENTAL, USING SOUND LEVEL METER
SAMPLING SITE : GURDARI/KUJAM-II/KUJAM-I/AMTIPANI BAUXITE MINES(NETERHAT-PLATEAU)
PROTOCOL : GENSOP/CALLAB-116
TEST START DATE : 20.07.2012
TEST END DATE : 23.07.2012

SL NO.	SAMPLING LOCATION	DATE & TIME OF SAMPLING	DAY TIME NOISE LEVEL dB (A) Leq	LIMIT IN dB(A) Leq DAY TIME (INDUSTRIAL AREA)
1	POCKLEN (L8T90)	09.07.2012 (10:00 Hrs)	80	75
2	DUMPER (H-6DTI-1613-6)	09.07.2012 (10:10 Hrs)	78	75
3	COMPRESSOR(ATLAS CAPCOXAH-17)	09.07.2012 (10:20 Hrs)	89	75
4	WAGON DRILL	09.07.2012 (10:30 Hrs)	89	75

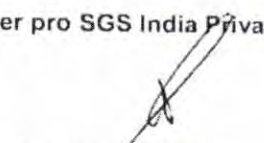
****End of Report****

Note: (i) The value is the Leq of twenty readings taken in each location (Day time).
(ii) Day time shall mean from 6:00 am to 10:00 pm

Checked by


Dipankar De Sarkar
Asst. Manager (Operations)

per pro SGS India Private Ltd.


Dr. Nemai Ghosh
Manager-Laboratory

Page 1 of 1

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TEST REPORT

Report No. : CA:GL:3120010521

DATE : 24/07/2012

JOE No. : 1212804665

Report Control No 3125011196

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

CUSTOMER NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS LOHARDAGA, JHARKHAND
CITY 835302
COUNTRY INDIA
SAMPLING METHOD N.A
SAMPLE DESCRIPTION AMBIENT AIR

MARKS ON SAMPLE SITE:GURDARI/KUJAM-II/AMTIPANI/KUJAM-I BAUXITE MINES(NETERHAT PLATEAU)
LOCATION:CHATAM VILLAGE(BUFFER ZONE)
DATE OF SAMPLING 07.07.2012 TO 08.07.2012
SAMPLE RECD ON 18/07/2012
TEST START DATE 18/07/2012
TEST END DATE 24/07/2012

Table with 5 columns: TESTS, PROTOCOL, RESULT, REQUIREMENT/LIMIT (As per CPCB Residential area), MIN, MAX. Rows include CARBON MONOXIDE (AT SITE), OXIDES OF NITROGEN (NOx), PARTICULATE MATTER(10), PARTICULATE MATTER(2.5), and SULPHUR DIOXIDE (SO2).

* Analysed at site.

**** End of Report ****

per pro SGS India Private Ltd.

Dr.Nemai Ghosh
Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010522

DATE : 25/07/2012

JOE No. : 1212804665

Report Control No.:3125011317

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

CUSTOMER NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS LOHARDAGA, JHARKHAND
CITY 835302
COUNTRY INDIA
SAMPLING METHOD N.A.
SAMPLE DESCRIPTION AMBIENT AIR

MARKS ON SAMPLE SITE:GURDARI/KUJAM-II/AMTIPANI/KUJAM-I BAUXITE MINES(NETERHAT PLATEAU)
LOCATION:POLLPOL VILLAGE(BUFFER ZONE)

JATE OF SAMPLING 08.07 2012 TO 09.07.2012
SAMPLE RECD ON 18/07/2012
TEST START DATE 18/07/2012
TEST END DATE 25/07/2012

Table with 5 columns: TESTS, PROTOCOL, RESULT, REQUIREMENT/LIMIT (As per CPCB Residential area), MIN, MAX. Rows include Carbon Monoxide, Oxides of Nitrogen, Particulate Matter (10 and 2.5), and Sulphur Dioxide.

* Analysed at site.

**** End of Report ****

per pro SGS India Private Ltd.

Dr.Nemai Ghosh
Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010523

DATE : 25/07/2012

JOE No. : 1212804665

Report Control No. 3125011316

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

CUSTOMER NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
 ADDRESS LOHARDAGA, JHARKHAND
 CITY 835302
 COUNTRY INDIA
 SAMPLING METHOD N.A.
 SAMPLE DESCRIPTION AMBIENT AIR

MARKS ON SAMPLE SITE:GURDARI/KUJAM-II/AMTIPANI/KUJAM-I BAUXITE MINES(NETERHAT PLATEAU)
 LOCATION :SAKUAPANI VILLAGE(BUFFER ZONE)
 DATE OF SAMPLING 08.07.2012 TO 09.07.2012
 SAMPLE RECD ON 18/07/2012
 TEST START DATE 18/07/2012
 TEST END DATE 25/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			As per CPCB (Residential area)	
			MIN	MAX
CARBON MONOXIDE (AT SITE)	GEN/SOP/CALLAB-88	<0.10 ppm *		1.7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	6.9 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	75.8 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	25.1 µg/m3		60 µg/m3
SULPHUR DIOXIDE (SO2)	IS 5182:PART 2:2001	< 4.0 µg/m3		80 µg/m3

* Analysed at site.

**** End of Report ****

per pro SGS India Private Ltd.

Dr.Nemai Ghosh
 Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010524

DATE : 25/07/2012

JOE No. : 1212804665

Report Control No.:3125011319

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

CUSTOMER NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS LOHARDAGA, JHARKHAND
CITY 835302
COUNTRY INDIA
SAMPLING METHOD N.A.
SAMPLE DESCRIPTION AMBIENT AIR

MARKS ON SAMPLE SITE:GURDARI/KUJAM-II/AMTIPANI/KUJAM-I BAUXITE MINES(NETERHAT PLATEAU)
LOCATION:KUJAM-II(COREZONE)
DATE OF SAMPLING 09.07.2012 TO 10.07.2012
SAMPLE RECD ON 18/07/2012
TEST START DATE 18/07/2012
TEST END DATE 25/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			As per CPCB (Residential area)	
			MIN	MAX
CARBON MONOXIDE (AT SITE)	GEN/SOP/CALLAB-88	<0.10 ppm *		1.7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	5.4 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	93.6 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	46.1 µg/m3		60 µg/m3
SULPHUR DIOXIDE (SO2)	IS 5182:PART 2:2001	< 4.0 µg/m3		80 µg/m3

* Analysed at site.

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

per pro SGS India Private Ltd.

Dr.Nimai Ghosh
Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010525

DATE : 25/07/2012

JOE No. : 1212804665

Report Control No.:3125011320

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

CUSTOMER NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
 ADDRESS LOHARDAGA, JHARKHAND
 CITY 835302
 COUNTRY INDIA
 SAMPLING METHOD N.A.
 SAMPLE DESCRIPTION AMBIENT AIR

MARKS ON SAMPLE SITE:GURDARI/KUJAM-II/AMTIPANI/KUJAM-I BAUXITE MINES(NETERHAT PLATEAU)
 LOCATION : KUJAM-1(COREZONE)
 DATE OF SAMPLING 09.07.2012 TO 10.07.2012
 SAMPLE RECD ON 18/07/2012
 TEST START DATE 18/07/2012
 TEST END DATE 25/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT As per CPCB (Residential area)	
			MIN	MAX
CARBON MONOXIDE (AT SITE)	GEN/SOP/CALLAB-88	<0.10 ppm *		1.7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	6.7 µg/m ³		80 µg/m ³
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	71.3 µg/m ³		100 µg/m ³
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	30.9 µg/m ³		60 µg/m ³
SULPHUR DIOXIDE (SO ₂)	IS 5182:PART 2:2001	< 4.0 µg/m ³		80 µg/m ³

* Analysed at site.

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

per pro SGS India Private Ltd.

Dr.Nemai Ghosh
 Manager Laboratory

Page 1 of 1

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TEST REPORT

Report No. : CA:GL:3120010527

DATE : 25/07/2012

JOE No. : 1212804665

Report Control No.:3125011314

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

CUSTOMER NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS LOHARDAGA, JHARKHAND
CITY 835302
COUNTRY INDIA
SAMPLING METHOD N.A.
SAMPLE DESCRIPTION AMBIENT AIR

MARKS ON SAMPLE SITE:GURDARI/KUJAM-II/AMTIPANI/KUJAM-I BAUXITE MINES(NETERHAT PLATEAU)
 LOCATION:RAJADERA(BUFFER ZONE)
ATE OF SAMPLING 10.07.2012 TO 11.07.2012
SAMPLE RECD ON 18/07/2012
TEST START DATE 18/07/2012
TEST END DATE 25/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			As per CPCB (Residential area)	
			MIN	MAX
CARBON MONOXIDE (AT SITE)	GEN/SOP/CALLAB-88	<0.10 ppm *		1.7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	4.5 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	76.7 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	31.1 µg/m3		60 µg/m3
SULPHUR DIOXIDE (SO2)	IS 5182:PART 2:2001	< 4.0 µg/m3		80 µg/m3

* Analysed at site.

***** End of Report *****
 per pro SGS India Private Ltd.

Dr.Nemai Ghosh
 Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010519

DATE : 24/07/2012

JOE No 1212804665

Report Control No 3125011198

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

CUSTOMER NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS LOHARDAGA, JHARKHAND
CITY 835302
COUNTRY INDIA
SAMPLING METHOD N A
SAMPLE DESCRIPTION AMBIENT AIR

MARKS ON SAMPLE SITE GURDARI/KUJAM-II/AMTIPANI/KUJAM I BAUXITE MINES(NETERHAT PLATEAU)
 LOCATION GURDARI(COREZONE)
DATE OF SAMPLING 06/07/2012 TO 07/07/2012
SAMPLE RECD ON 18/07/2012
TEST START DATE 18/07/2012
TEST END DATE 24/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			MIN	MAX
CARBON MONOXIDE (AT SITE)	GEN/SOP/CALLAB-88	<0.1 ppm*	As per CPCB (Residential area)	
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6 2006	6.7 µg/m3	7	80 µg/m3
PARTICULATE MATTER(10)	IS 5182/PART 23/2006	93.6 µg/m3	100	100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	40.5 µg/m3	60	60 µg/m3
SULPHUR DIOXIDE (SO2)	IS 5182 PART 2 2001	< 4.0 µg/m3	80	80 µg/m3

* Analysed at site

..... End of Report

per pro SGS India Private Ltd.

Dr. Nimai Ghosh
 Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010520

DATE : 24/07/2012

JOE No : 1212804665

Report Control No 3125011197

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

CUSTOMER NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS LOHARDAGA JHARKHAND
CITY 835302
COUNTRY INDIA
SAMPLING METHOD N A
SAMPLE DESCRIPTION AMBIENT AIR

MARKS ON SAMPLE SITE GURDARI/KUJAM-II/AMTIPANI/KUJAM-I BAUXITE MINES(NETERHAT PLATEAU)
LOCATION AMTIPANI(CORE ZONE)
DATE OF SAMPLING 07 07 2012 TO 08 07 2012
SAMPLE RECD ON 18/07/2012
TEST START DATE 18/07/2012
TEST END DATE 24/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			As per CPCB (Residential area)	
			MIN	MAX
CARBON MONOXIDE (AT SITE)	GEN/SOP/CALLAB-88	<0.1 ppm*		1.7 ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6 2006	4.1 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS 5182(PART 23)2006	98.0 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50) Appendix L	47.9 µg/m3		60 µg/m3
SULPHUR DIOXIDE (SO2)	IS 5182 PART 2 2001	< 4.0 µg/m3		80 µg/m3

* Analysed at site

*** End of Report ***

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Dr. Nimai Ghosh
 Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010526

DATE : 25/07/2012

JOE No. : 1212804665

Report Control No.:3125011315

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

CUSTOMER NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS LOHARDAGA, JHARKHAND
CITY 835302
COUNTRY INDIA
SAMPLING METHOD N.A.
SAMPLE DESCRIPTION AMBIENT AIR

MARKS ON SAMPLE SITE:GURDARI/KUJAM-II/AMTIPANI/KUJAM-I BAUXITE MINES(NETERHAT PLATEAU)
LOCATION :DMAIL VILLAGE(BUFFER ZONE)
DATE OF SAMPLING 10.07.2012 TO 11.07 2012
SAMPLE RECD ON 18/07/2012
TEST START DATE 18/07/2012
TEST END DATE 25/07/2012

Table with 5 columns: TESTS, PROTOCOL, RESULT, REQUIREMENT/LIMIT (As per CPCB Residential area), MIN, MAX. Rows include CARBON MONOXIDE (AT SITE), OXIDES OF NITROGEN (NOx), PARTICULATE MATTER(10), PARTICULATE MATTER(2.5), and SULPHUR DIOXIDE (SO2).

* Analysed at site.

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

per pro SGS India Private Ltd.

Dr.Nemai Ghosh
Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010562

DATE : 26/07/2012

JOE No 1212804675

Control No 3125011421

SAMPLE COLLECTED BY SGS

SAMPLE IDENTIFIED AS : GROUND WATER

COMPANY NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)

**ADDRESS LOHARDAGA, JHARKHAND
CITY 835302**

SAMPLING METHOD APHA 1060B/9060A

SAMPLE DESCRIPTION GROUND WATER

SAMPLE CONDITION IN PLASTIC AND STERILISED BOTTLE

SAMPLE QTY. 6.5L APP

*** MARKS ON SAMPLE SITE:GURDARI KUJAM-II/AMTIPANE/KUJAM-1
BAUXITE MINES(NETERHAT PLATEAU)
LOCATION GURDARI VILLAGE(BOREWELL HAND PUMP)**

COLLECTED ON 10.07.2012

REGISTERED ON 18/07/2012

TEST START DATE 18/07/2012

TEST END DATE 26/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
ALKALINITY (as CaCO3)	IS 3025 PART 23 1986(Reaff 1998)	19.60 mg/l	200mg/l	600mg/l
ALUMINIUM (as Al)	IS 3025 Part 55 2003	<0.02 mg/l	0.03mg/l	0.2mg/l
ANIONIC DETERGENTS (as MBAS)	ANNEX K of IS 13428 2005	<0.05 mg/l	0.2mg/l	1mg/l
ARSENIC (as As)	IS 3025 PART 37 1988(Reaff 1999)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax.
BORON	Annex H OF IS:13428:2005	<0.05 mg/l	1.0mg/l	5.0mg/l

Page 1 of 4

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SGS India Pvt. Ltd.

Laboratory, Behala Industrial Complex, Phase II, First Floor, 620, Diamond Harbour Road, Kolkata-700034 Phone: 91-33-64996700, 64996701, Fax: 91-33-24470267

Regd & Corp. Off: SGS House 4B A S. Marg Vikhroli (West) Mumbai 400082 Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



TEST REPORT

Report No. : CA:GL:3120010562

DATE : 26/07/2012

JOE No. : 1212804675

Control No. 3125011421

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
CADMIUM (as Cd)	IS 3025:PART 41 1992(Reaff.1998)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax.
CALCIUM (as Ca)	IS 3025:PART 40 :1991(Reaff 2003)	7.27 mg/l	75mg/l	200mg/l
CHLORIDE (as Cl)	Clause 2 of IS 3025 Part 32. 1988(Reaff 1999)	22.15 mg/l	250mg/l	1000mg/l
CHROMIUM (Cr6+)	IS 3025:PART 52:2003	<0.01 mg/l	0.05mg/l	No Relax.
COLOUR (HAZEN UNITS)	IS 3025:PART 4 :1983(Reaff.2002)	10	5.0	25
COPPER	IS 3025: PART 42:1992(Reaff. 2003) BY ICPOES	0.05 mg/l	0.05mg/l	1.5mg/l
CYANIDE (as CN)	IS 3025:PART 27 :1986(Reaff.1998)	<0.02 mg/l	0.05mg/l	No Relax.
E.coli	IS 1622:1981(Reaff.2003)	Absent/100ml		ABS/100ml
Faecal coliforms	IS 1622:1981(Reaff2003)	Absent/100ml		ABS/100ml
FLUORIDE	IS.3025(PART 60):2008	<0.10 mg/l	1.0mg/l	1.5mg/l
IRON (as Fe)	IS 3025:PART 53:2003 (BY ICPOES)	0.75 mg/l	0.3mg/l	1 mg/l
LEAD (as Pb)	IS 3025:PART 47:1994(Reaff.2003) BY ICPOES	<0.005 mg/l	0.05mg/l	No Relax.
MAGNESIUM (as Mg)	IS 3025:PART 46 :1994(Reaff.1999)	2.21 mg/l	30mg/l	100mg/l

Page 2 of 4

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SGS India Pvt. Ltd. Laboratory, Behala Industrial Complex, Phase II, First Floor, 620, Diamond Harbour Road, Kolkata-700034 Phone : 91-33-64996700, 64996701, Fax : 91-33-24470267

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TEST REPORT

Report No. : CA:GL:3120010562

DATE : 26/07/2012

JOE No. : 1212804675

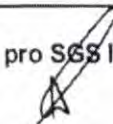
Control No.:3125011421

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
			<u>As per IS</u> <u>10500:1991(REAFF</u> <u>1993)</u>	
TURBIDITY(in NTU)	IS 3025:PART 10 :1984(Reaff.2002)	16.2	5.0NTU	10NTU
ZINC (as Zn)	IS 3025 Part 49:1991(Reaff.2003) BY ICPOES	0.01 mg/l	5mg/l	15mg/l
TOTAL DISSOLVED SOLIDS	IS 3025:PART 16 1984(Reaff.2002)	96 mg/l	500mg/l	2000mg/l

* Analysed at site.

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

per pro SGS India Private Ltd.


Dr. Nemai Ghosh
Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010562

DATE : 26/07/2012

JOE No. : 1212804675

Control No.:3125011421

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
MANGANESE	IS:3025(PART 59) 2006	0.02 mg/l	0.1mg/l	0.3mg/l
MERCURY (as Hg)	IS 3025:PART 48 .1994(Reaff.1999)BY ICPOES	<0.001 mg/l	0.001mg/l	No Relax
MINERAL OIL	CLAUSE 6 OF IS 3025:PART 39:1991(Reaff. 2003)	BDL(DL-0.01 mg/l)	0.01mg/l	0.03mg/l
NITRATE	IS 3025:PART 34 .1988(Reaff.1999)	12.60 mg/l	45mg/l	No Relax.
ODOUR	IS 3025:PART 5:1983(Reaff.2002)	Unobjectionable	Unobject.	Unobject.
pH	IS 3025:PART 11:1983(Reaff.2002)	6.84 *	6.5-8.5	No Relax.
PHENOLIC COMPOUNDS (as C6H5OH)	IS 3025(Part 43)1992(Reaff 2005)	<0.001 mg/l	0.001mg/l	0.002mg/l
RESIDUAL FREE CHLORINE	GEN/SOP/CALLAB-13 3	<0.10 mg/l *	0.2mg/l	--
SELENIUM	IS 3025:PART 56:2003 (BY ICPOES)	<0.005 mg/l	0.01mg/l	No Relax.
SULPHATE	CLAUSE 4 OF IS 3025:PART 24:1986(Reaff. 2003)	<2.0 mg/l	200mg/l	400mg/l
TASTE	IS 3025:PART 7 1984(Reaff 2002)	Agreeable	Agreeable	.
Total Coliforms	IS 1622:1981(Reaff.2003)	<2 MPN/100ml		10/100 ml
TOTAL HARDNESS (as CaCO3)	IS 3025:PART 21 .1983(Reaff.2002)	27.27 mg/l	300mg/l	600mg/l

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TEST REPORT

Report No. : CA:GL:3120010563

DATE : 26/07/2012

JOE No. 1212804675

Control No.:3125011417

SAMPLE COLLECTED BY SGS

SAMPLE IDENTIFIED AS : GROUND WATER

COMPANY NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)

ADDRESS LOHARDAGA, JHARKHAND
CITY 835302

SAMPLING METHOD APHA 1060B/9060A

SAMPLE DESCRIPTION GROUND WATER

SAMPLE CONDITION IN PLASTIC AND STERILISED BOTTLE

SAMPLE QTY. 6.5L APP

TESTS ON SAMPLE SITE: GURDARI KUJAM-II/AMTIPANE/KUJAM-1
BAUXITE MINES(NETERHAT PLATEAU)
LOCATION : CHIRODIH VILLAGE

COLLECTED ON 10.07 2012

REGISTERED ON 18/07/2012

TEST START DATE 18/07/2012

TEST END DATE 26/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
ALKALINITY (as CaCO3)	IS 3025:PART 23 :1986(Reaff.1998)	100.35 mg/l	200mg/l	600mg/l
ALUMINIUM (as Al)	IS 3025 : Part 55 : 2003	<0.02 mg/l	0.03mg/l	0.2mg/l
ANIONIC DETERGENTS (as MBAS)	ANNEX. K of IS 13428: 2005	<0.05 mg/l	0.2mg/l	1mg/l
ARSENIC (as As)	IS 3025:PART 37.1988(Reaff.1999)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax.
BORON	Annex.H OF IS:13428:2005	<0.05 mg/l	1.0mg/l	5.0mg/l

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TEST REPORT

Report No. : CA:GL:3120010563	DATE : 26/07/2012
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JOE No. : 1212804675 Control No.:3125011417

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			As per IS	
			Desirable	Permissible
CADMIUM (as Cd)	IS 3025:PART 41 :1992(Reaff.1998)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax
CALCIUM (as Ca)	IS 3025:PART 40 :1991(Reaff.2003)	24.24 mg/l	75mg/l	200mg/l
CHLORIDE (as Cl)	Clause 2 of IS 3025 Part 32:1988(Reaff. 1999)	4.76 mg/l	250mg/l	1000mg/l
CHROMIUM (Cr6+)	IS 3025:PART 52:2003	<0.01 mg/l	0.05mg/l	No Relax.
COLOUR (HAZEN UNITS)	IS 3025:PART 4 :1983(Reaff.2002)	5	5.0	25
COPPER	IS 3025: PART 42:1992(Reaff. 2003) BY ICPOES	<0.01 mg/l	0.05mg/l	1.5mg/l
CYANIDE (as CN)	IS 3025:PART 27 :1986(Reaff.1998)	<0.02 mg/l	0.05mg/l	No Relax.
E.coli	IS 1622:1981(Reaff.2003)	Absent/100ml		ABS/100ml
Faecal coliforms	IS 1622:1981(Reaff2003)	Absent/100ml		ABS/100ml
FLUORIDE	IS:3025(PART 60):2008	<0.10 mg/l	1.0mg/l	1.5mg/l
IRON (as Fe)	IS 3025:PART 53:2003 (BY ICPOES)	0.20 mg/l	0.3mg/l	1 mg/l
LEAD (as Pb)	IS 3025:PART 47:1994(Reaff.2003) BY ICPOES	<0.005 mg/l	0.05mg/l	No Relax.
MAGNESIUM (as Mg)	IS 3025:PART 46 :1994(Reaff.1999)	7.85 mg/l	30mg/l	100mg/l

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TEST REPORT

Report No. : CA:GL:3120010563

DATE : 26/07/2012

JOE No. 1212804675

Control No.:3125011417

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
MANGANESE	IS:3025(PART 59) 2006	<0.01 mg/l	0.1mg/l	0.3mg/l
MERCURY (as Hg)	IS 3025:PART 48 :1994(Reaff.1999)BY ICPOES	<0.001 mg/l	0.001mg/l	No Relax.
MINERAL OIL	CLAUSE 6 OF IS 3025:PART 39:1991(Reaff. 2003)	BDL(DL-0.01 mg/l)	0.01mg/l	0.03mg/l
NITRATE	IS 3025:PART 34 :1988(Reaff.1999)	6.27 mg/l	45mg/l	No Relax.
ODOUR	IS 3025:PART 5:1983(Reaff.2002)	Unobjectionable	Unobject.	Unobject.
pH	IS 3025:PART 11:1983(Reaff.2002)	6.76 *	6.5-8.5	No Relax.
PHENOLIC COMPOUNDS (as C6H5OH)	IS 3025(Part 43)1992(Reaff 2005)	<0.001 mg/l	0.001mg/l	0.002mg/l
RESIDUAL FREE CHLORINE	GEN/SOP/CALLAB-13 3	<0.10 mg/l *	0.2mg/l	--
SELENIUM	IS 3025:PART 56:2003 (BY ICPOES)	<0.005 mg/l	0.01mg/l	No Relax.
SULPHATE	CLAUSE 4 OF IS 3025:PART 24:1986(Reaff. 2003)	<2.0 mg/l	200mg/l	400mg/l
TASTE	IS 3025:PART 7 :1984(Reaff.2002)	Agreeable	Agreeable	-
Total Coliforms	IS 1622:1981(Reaff.2003)	<2 MPN/100ml		10/100 ml
TOTAL HARDNESS (as CaCO3)	IS 3025:PART 21 :1983(Reaff.2002)	92.92 mg/l	300mg/l	600mg/l

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TEST REPORT

Report No. : CA:GL:3120010563

DATE : 26/07/2012

JOE No. : 1212804675

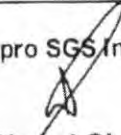
Control No :3125011417

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
			<u>As per IS</u> <u>10500:1991(REAFF</u> <u>1993)</u>	
TURBIDITY(in NTU)	IS 3025:PART 10 :1984(Reaff.2002)	1.06	5.0NTU	10NTU
ZINC (as Zn)	IS 3025 Part 49:1991(Reaff.2003) BY ICPOES	0.04 mg/l	5mg/l	15mg/l
TOTAL DISSOLVED SOLIDS	IS 3025:PART 16:1984(Reaff.2002)	134 mg/l	500mg/l	2000mg/l

* Analysed at site.

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

per pro SGS India Private Ltd.


Dr.Nimai Ghosh
Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010574

DATE : 27/07/2012

JOE No. : 1212804679

Control No.:3125011492

SAMPLE COLLECTED BY SGS

SAMPLE IDENTIFIED AS : SURFACE WATER

COMPANY NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)

ADDRESS LOHARDAGA, JHARKHAND
CITY 835302

SAMPLING METHOD APHA 1060B/9060A

SAMPLE DESCRIPTION SURFACE WATER

SAMPLE CONDITION IN PLASTIC AND STERILISED BOTTLE

SAMPLE QTY. 6.5L APP

MARKS ON SAMPLE SITE : GURDARI/KUJAM-II/AMTIPANI/KUJAM-1 BAUXITE MINES
(NETARHAT PLATEAU)

LOCATION : NORTH KOEL RIVER(PATHIYAGNI VILLAGE)

COLLECTED ON 10.07.2012

REGISTERED ON 18/07/2012

TEST START DATE 18/07/2012

TEST END DATE 27/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
ALKALINITY (as CaCO3)	IS 3025:PART 23 :1986(Reaff.1998)	14.11 mg/l	200mg/l	600mg/l
ALUMINIUM (as Al)	IS 3025 : Part 55 : 2003	0.2 mg/l	0.03mg/l	0.2mg/l
ANIONIC DETERGENTS (as MBAS)	ANNEX. K of IS 13428: 2005	<0.05 mg/l	0.2mg/l	1mg/l
ARSENIC (as As)	IS 3025:PART 37-1988(Reaff.1999)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax.
BORON	Annex.H OF IS:13428:2005	<0.05 mg/l	1.0mg/l	5.0mg/l

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TEST REPORT

Report No. : CA:GL:3120010574

DATE : 27/07/2012

JOE No. : 1212804679

Control No.:3125011492

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
CADMIUM (as Cd)	IS 3025:PART 41 1992(Reaff.1998)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax.
CALCIUM (as Ca)	IS 3025:PART 40 :1991(Reaff.2003)	4.44 mg/l	75mg/l	200mg/l
CHLORIDE (as Cl)	Clause 2 of IS 3025 Part 32:1988(Reaff. 1999)	2.86 mg/l	250mg/l	1000mg/l
CHROMIUM (Cr6+)	IS 3025:PART 52:2003	<0.01 mg/l	0.05mg/l	No Relax.
COLOUR (HAZEN UNITS)	IS 3025:PART 4 :1983(Reaff 2002)	10	5.0	25
COPPER	IS 3025: PART 42:1992(Reaff. 2003) BY ICPOES	<0.01 mg/l	0.05mg/l	1.5mg/l
CYANIDE (as CN)	IS 3025:PART 27 :1986(Reaff.1998)	<0.02 mg/l	0.05mg/l	No Relax.
E.coli	IS 1622:1981(Reaff.2003)	Absent/100ml		ABS/100ml
Faecal coliforms	IS 1622:1981(Reaff2003)	Absent/100ml		ABS/100ml
FLUORIDE	IS:3025(PART 60):2008	<0.10 mg/l	1.0mg/l	1.5mg/l
IRON (as Fe)	IS 3025:PART 53:2003 (BY ICPOES)	0.34 mg/l	0.3mg/l	1 mg/l
LEAD (as Pb)	IS 3025:PART 47:1994(Reaff.2003) BY ICPOES	<0.005 mg/l	0.05mg/l	No Relax.
MAGNESIUM (as Mg)	IS 3025:PART 46 :1994(Reaff.1999)	1.23 mg/l	30mg/l	100mg/l

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TEST REPORT

Report No. : CA:GL:3120010574

DATE : 27/07/2012

JOE No. : 1212804679

Control No.:3125011492

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
MANGANESE	IS:3025(PART 59) 2006	0.02 mg/l	0.1mg/l	0.3mg/l
MERCURY (as Hg)	IS 3025:PART 48 :1994(Reaff.1999)BY ICPOES	<0.001 mg/l	0.001mg/l	No Relax.
MINERAL OIL	CLAUSE 6 OF IS 3025:PART 39:1991(Reaff. 2003)	BDL(DL:0.01 mg/l)	0.01mg/l	0.03mg/l
NITRATE	IS 3025:PART 34 :1988(Reaff.1999)	3.39 mg/l	45mg/l	No Relax.
ODOUR	IS 3025:PART 5:1983(Reaff.2002)	Unobjectionable	Unobject.	Unobject.
pH	IS 3025:PART 11:1983(Reaff.2002)	6.54 *	6.5-8.5	No Relax.
PHENOLIC COMPOUNDS (as C6H5OH)	IS 3025(Part 43)1992(Reaff 2005)	<0.001 mg/l	0.001mg/l	0.002mg/l
RESIDUAL FREE CHLORINE	GEN/SOP/CALLAB-13 3	<0.10 mg/l *	0.2mg/l	--
SELENIUM	IS 3025:PART 56:2003 (BY ICPOES)	<0.005 mg/l	0.01mg/l	No Relax.
SULPHATE	CLAUSE 4 OF IS 3025:PART 24:1986(Reaff. 2003)	4.15 mg/l	200mg/l	400mg/l
TASTE	IS 3025:PART 7 :1984(Reaff.2002)	Agreeable	Agreeable	.
Total Coliforms	IS 1622:1981(Reaff.2003)	22 MPN/100ml		10/100 ml
TOTAL HARDNESS (as CaCO3)	IS 3025:PART 21 :1983(Reaff.2002)	16.16 mg/l	300mg/l	600mg/l

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TEST REPORT

Report No. : CA:GL:3120010574

DATE : 27/07/2012

JOE No. : 1212804679

Control No.:3125011492

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
TURBIDITY(in NTU)	IS 3025:PART 10 :1984(Reaff.2002)	36.8	5.0NTU	10NTU
ZINC (as Zn)	IS 3025 Part 49:1991(Reaff.2003) BY ICPOES	<0.01 mg/l	5mg/l	15mg/l
TOTAL DISSOLVED SOLIDS	IS 3025:PART 16:1984(Reaff.2002)	34 mg/l	500mg/l	2000mg/l

*analysed at site

**** End of Report ****

per pro SGS India Private Ltd.

Dr.Nemai Ghosh
Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010580

DATE : 28/07/2012

JOE No. : 1212804680

Control No. :3125011552

SAMPLE COLLECTED BY SGS

SAMPLE IDENTIFIED AS : DRINKING WATER

COMPANY NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
 ADDRESS LOHARDAGA, JHARKHAND
 CITY 835302
 SAMPLING METHOD APHA 1060B/9060A
 SAMPLE DESCRIPTION DRINKING WATER
 SAMPLE CONDITION IN PLASTIC AND STERILISED BOTTLE
 SAMPLE QTY. 6.5L APP
 MARKS ON SAMPLE SITE : GURDARI/KUJAM -II/AMTIPANI/KUJAM -I BAUXITE MINES
 (NETARHAT PLATEAU)
 LOCATION : SPRING WATER (KUJAM VILLAGE)
 COLLECTED ON 10.07.2012
 REGISTERED ON 18/07/2012
 TEST START DATE 18/07/2012
 TEST END DATE 28/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
ALKALINITY (as CaCO ₃)	IS 3025:PART 23 :1986(Reaff.1998)	12.54 mg/l	200mg/l	600mg/l
ALUMINIUM (as Al)	IS 3025 : Part 55 : 2003	0.02 mg/l	0.03mg/l	0.2mg/l
ANIONIC DETERGENTS (as MBAS)	ANNEX. K of IS 13428: 2005	<0.05 mg/l	0.2mg/l	1mg/l
ARSENIC (as As)	IS 3025:PART 37:1988(Reaff.1999)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax.
BORON	Annex.H OF IS:13428:2005	<0.05 mg/l	1.0mg/l	5.0mg/l

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TEST REPORT

Report No. : CA:GL:3120010580

DATE : 28/07/2012

JOE No. : 1212804680

Control No.:3125011552

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
CADMIUM (as Cd)	IS 3025:PART 41 :1992(Reaff.1998)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax.
CALCIUM (as Ca)	IS 3025:PART 40 :1991(Reaff.2003)	4.44 mg/l	75mg/l	200mg/l
CHLORIDE (as Cl)	Clause 2 of IS 3025 Part 32:1988(Reaff. 1999)	<2.0 mg/l	250mg/l	1000mg/l
CHROMIUM (Cr6+)	IS 3025:PART 52:2003	<0.01 mg/l	0.05mg/l	No Relax.
COLOUR (HAZEN UNITS)	IS 3025:PART 4 :1983(Reaff.2002)	5	5.0	25
COPPER	IS 3025: PART 42:1992(Reaff. 2003) BY ICPOES	<0.01 mg/l	0.05mg/l	1.5mg/l
CYANIDE (as CN)	IS 3025:PART 27 :1986(Reaff.1998)	<0.02 mg/l	0.05mg/l	No Relax.
E.coli	IS 1622:1981(Reaff.2003)	Absent/100ml		ABS/100ml
Faecal coliforms	IS 1622:1981(Reaff2003)	Absent/100ml		ABS/100ml
FLUORIDE	IS:3025(PART 60):2008	<0.10 mg/l	1.0mg/l	1.5mg/l
IRON (as Fe)	IS 3025:PART 53:2003 (BY ICPOES)	0.05 mg/l	0.3mg/l	1 mg/l
LEAD (as Pb)	IS 3025:PART 47:1994(Reaff.2003) BY ICPOES	<0.005 mg/l	0.05mg/l	No Relax.
MAGNESIUM (as Mg)	IS 3025:PART 46 :1994(Reaff.1999)	<1.0 mg/l	30mg/l	100mg/l

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TEST REPORT

Report No. : CA:GL:3120010580

DATE : 28/07/2012

JOE No. : 1212804680

Control No.:3125011552

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
MANGANESE	IS:3025(PART 59) 2006	<0.005 mg/l	0.1mg/l	0.3mg/l
MERCURY (as Hg)	IS 3025:PART 48 :1994(Reaff.1999)BY ICPOES	<0.001 mg/l	0.001mg/l	No Relax.
MINERAL OIL	CLAUSE 6 OF IS 3025:PART 39:1991(Reaff. 2003)	BDL(DL-0.01 mg/l)	0.01mg/l	0.03mg/l
NITRATE	IS 3025:PART 34 :1988(Reaff.1999)	2.27 mg/l	45mg/l	No Relax.
ODOUR	IS 3025:PART 5:1983(Reaff.2002)	Unobjectionable	Unobject.	Unobject.
pH	IS 3025:PART 11:1983(Reaff.2002)	6.86 *	6.5-8.5	No Relax.
PHENOLIC COMPOUNDS (as C ₆ H ₅ OH)	IS 3025(Part 43)1992(Reaff 2005)	<0.001 mg/l	0.001mg/l	0.002mg/l
RESIDUAL FREE CHLORINE	GEN/SOP/CALLAB-13 3	<0.10 mg/l *	0.2mg/l	--
SELENIUM	IS 3025:PART 56:2003 (BY ICPOES)	<0.005 mg/l	0.01mg/l	No Relax.
SULPHATE	CLAUSE 4 OF IS 3025:PART 24:1986(Reaff. 2003)	<2.0 mg/l	200mg/l	400mg/l
TASTE	IS 3025:PART 7 :1984(Reaff.2002)	Agreeable	Agreeable	-
Total Coliforms	IS 1622:1981(Reaff.2003)	<2 MPN/100ml		10/100 ml
TOTAL HARDNESS (as CaCO ₃)	IS 3025:PART 21 :1983(Reaff.2002)	14.14 mg/l	300mg/l	600mg/l

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TEST REPORT

Report No. : CA:GL:3120010580

DATE : 28/07/2012

JOE No. : 1212804680

Control No.:3125011552

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
TURBIDITY(in NTU)	IS 3025:PART 10 :1984(Reaff.2002)	3.36	5.0NTU	10NTU
ZINC (as Zn)	IS 3025 Part 49:1991(Reaff.2003) BY ICPOES	0.01 mg/l	5mg/l	15mg/l
TOTAL DISSOLVED SOLIDS	IS 3025:PART 16.1984(Reaff.2002)	24 mg/l	500mg/l	2000mg/l

Based on the above parameters the sample complies with maximum desirable and maximum permissible limit as per IS:10500:1991 (Reaff 1993) , BDL=Below Detection Limit ; DL=Detection Limit
* Analysed at site.

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

per pro **SGS India Private Ltd.**

Dr.Nemai Ghosh
Manager Laboratory

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BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2012-13 (Up to-Sep)

The composite cost during the year 2012-13 (April to Sep) for environmental protection & pollution control by Jharkhand Mines division of Hindalco Industries Ltd for implementation the suggested measures in EC at all the operating mines in the state of Jharkhand-namely Pakhar (115.13 Ha), Pakhar (15.58 Ha), Pakhar (109.507 Ha), Serengdag (140.06 Ha), Serengdag (155.81 Ha), Jalim & Sanai (12.14 Ha), Gurdari (584.19 Ha), Amtipani (190.95 Ha), Kujam (80.97 Ha) Kujam II (157.38 Ha) and Bagru (75.41 Ha), Chiro kukud,& Orsa pat.

Sl No	Description	Budget (in Lakh Rs.)	Actual (in Lakh Rs.)
1	Pollution Control & Environment monitoring	7.50	4.50
2	Reclamation/ Back filing & Rehabilitation	**	20.60
3	Green belt & Plantation	25.00	33.04
4	Rural Development	65.00	36.30

**part of OB removed cost.



OFFICE ORDER

In connection with the earlier office order dated 12.11.2011 the re constituted team of Environment management cell to ensure compliance of various environmental Acts, regulations & rules at Mines Division, Hindalco, Lohardaga as follows:

The Environment Management Cell will consist of:

1. B. K. Mahapatra, Sr. Manager (Geology), Convenor.

Members:

2. Utpal Gupta, Manager (Environment)
3. S. Joshi, Manager (Bagru Mines)
4. A. Anbarasu, Mines Manager (Serengdag A)
5. Ajay Pandey, Mines Manager (Pakhar)
6. Kiran Sankar Singh, Mines Manager (Gurdari)
7. Vidya Sagar Singh, Mines Manager (Serengdag B)
8. Ashish Upadhyay, Mines Manager (Kujam I & II)
9. Amar Bharati, Mines Manager (Amtipani)
10. Manoj Kumar Singh, Mines Manager (Pakhar 109.507 Ha)
11. Rajesh Ambastha, Mines Manager (Chiro Kukud & Orsa)

By order

A handwritten signature in blue ink, appearing to read "bkh".

Bijesh Kumar Jha
VP (Mines)

Cc to: - All Mines Manager
All Department head
Notice Board.

PRODUCTION, MINED OUT, BACKFILLED, PRODUCTION AND OVERBURDEN REMOVAL FROM APR-12 TO SEP-12

Name of Mines	Mining lease area (Ha)	Mined Out area (in Acres)	Backfilled area (in Acres)	Production (in MT)	Overburden Removal (in Cub.M.)
Shrengdag Bauxite Mines	155.81	6.52	6.6	133955.00	178177.00
Gurdari Bauxite Mines	584.19	7.5	7	165423.00	123688.52
Jalim & Sanai	12.14	0.9	0.1	15425.00	19280.00
Serangdag	140.06	2.5	1.6	52707.00	50247.00
Pakhar Buxite Mines	115.13	1.45	0.5	72233.00	124920.48
Pakhar Buxite Mines	8.09	0.5	0	3760.00	10500.00
Kujam-I	80.87	1.9	1.2	12998.00	3074.30
Kujam-II	157.38	8.33	6.43	134992.00	209109.49
Amtipani	190.95	7.68	6.74	67025.00	87430.64
Chiro-Kukud	152.57	2	1.2	36700.00	27525.00
Orsa Bauxite Mines	196.36	0	0	0.00	0.00
Hisri New	14.55	1.24	0	99651.00	51620.92
Bagru	75.41	1.78	1.5	84320	84477.09
Minerals & Minerals Limited					
Pakhar Buxite Mines	109.507	5.5	3	67850.00	75608.15
Pakhar Buxite Mines	15.58	0.8	0.2	9075.00	28863.15