



Ref No: HIL/LHD/VP (M)/MoEF/ 635-

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 Shrengdag(155.81 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-11015/125/2006-IA II(M) dated 13th April 2007**

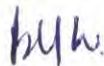
Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Shrengdag (155.81 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

SHRENGDAG BAUXITE MINES(155.81 Ha)

Period : April'12 – Sep'12

J-11015/125/2006-IA.II (M)Dated 13.4.2007

Sl No	Conditions	Compliance Status
Specific Conditions		
1	All the conditions stipulated by SPCB in their NOC shall be effectively implemented.	Being 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 and Cabinet approval on recommendation of District Collector who is the competent authority to give permission for using the agricultural land for non-agricultural purpose
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 going on as per duly approved mining plan. The reclamation plan, post mine land use and progressive greenbelt development plan has been prepared and submitted.
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.	Now, 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	The Project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operations.	It is being ensured. No natural water course has been obstructed as yet.
6	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 during mining operation. Whenever backfilling will be done to the mined out area, subsoil will be used for backfilling to reclaim and restore the damage area upto the extent possible.
7	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	Overburden and waste rock from the crushing pit are being used for back filling. Year wise backfilling and plantation raised over the back filled are

	vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six month basis.	is provided. (enclosed Annexure).
8	<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>	No run off is being generated from mining activities. However, to collect and manage rainwater during monsoon, part of mined out area is used as settling tank. Settled water is being used for sprinkling of quarry, roads, green belt development, etc.
9	Plantation shall be raised in an area of 70.68 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.	In 2012, we have plantation on 3.5 acres land has been done. Rest to be complied during the life of project.
10	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.	A plan has already been prepared 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 any suggestions. Recommendation of CGWB shall be implemented to augment the ground water resources of the area. Copy of letter already submitted to regional office.
11	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	It is being monitored. Monitoring report is enclosed as Annexure

	(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.	
12	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 drawal of water from the surface water bodies.
13	Water monitoring both for quality and quantity shall be carried out at four locations namely one spring and three streams. Sixmonthly report should be submitted to the Ministry of Environment and Forest and its Regional Office located at Bhubneshwar.	Analysis of water quality at four locations is being carried out. Analysis data for period of reporting is enclosed in Annexure
14	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
15	Drills should either be operated with dust extractors or should be equipped with water injection system.	Drilling is being done with water pouring in the drill holes intermittently for dust suppression which is the best method for jackhammer drilling.
16	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.
17	Consent to operate should be obtained from SPCB prior to start of enhanced production from the mine.	Has been obtained and enclosed in Annexure
18	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.
19	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>Melursus 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
20	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 of 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	Complied.
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. Details of excavation, quantum of mineral, OB, etc have been furnished for the financial year 12-13 is Annexed
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 locations have been fixed after due consultation of SPCB and regular monitoring is being carried out with the available in-house facilities. 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 locations have been fixed after due consultation of SPCB. Monitoring Reports is enclosed as 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 are generally being engaged at the places where active mining is in progress 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. at various locations of the work zone area and a monitoring report for the period of reporting six monthly compliance is enclosed. Workers engaged in operation of HEMMs, etc have also been provided with PPEs such as ear plug and ear muffs.
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 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 enclosed
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	Not applicable. The mine is running since 1976.

	authorities and the date of start of land development work.	
11	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubneshwar.	Statement of budgetary provision and actual expenses for the year 12-13 for environmental protection measure is enclosed. It is once again 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.
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	The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Officer, Bhubaneshwar, Central Pollution Control Board and State Pollution Control Board.	Complied
14	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 .
15	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 .
16	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.



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 COMPLEX, DHURWA, RANCHI-834004.
Phone No:-0651- 2400852, 2400851, Fax No:- 2400850.

Ref.No. PC/RNC/198/02 / 4.795

Dated- 17.4.12

CONSENT TO OPERATE

With reference to the application dated 30.09.2011 of G.M. (Operation), M/s Hindalco Industries Ltd; Court Road, Lohardaga I/C Sherengdag Bauxite Mines -155.81 Ha. 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/alterd/existing outlet(s) for discharge of trade effluent and (or) domestic sewage and to operate his (their) industrial plant to produce maximum 2,60,000 TPA of Bauxite ore At- Sherengdag Bauxite Mines, P.O. + Dist- Lohardaga for the period from 01.01.2012 to 31.12.2012 with the following conditions :

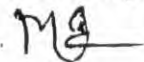
1. That, he(they) shall make any alteration, addition, deletion or modification in the ~~plant~~ mines without the prior clearance from the Board. EL
2. That, he(they) shall abide by the obligations provided under section 24, 31 and 33A of the Water (Prevention & Control of Pollution) Act, 1974 and shall 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 & Transboundry 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. M.D.

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 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;
(For Sherengdag Bauxite Mines),
Court Road, P.O. + Dist- Lohardaga.


(Sanjay Kumar Sinha)
Member Secretary.





TEST REPORT

Report No. : CA:GL:3120010718

Date : 19.07.2012

JOE No 1212804732

Report Control No 3125010861

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	SHRENGDAG(155.81)/SERENGDAG(140.07)/JALIM & SANAI BAUXITE MINES (SHRENGDAG PLATEAU)
PROTOCOL	GENSOP/CALLAB/116
DATE OF SAMPLING	03.07.2012 TO 04.07.2012
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 SITE OFFICE)	65	59	75	70

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

- Note: (i) The value is the Leq of One Hundred Seventy readings taken in day time and sixty-nine 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

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TEST REPORT

Report No. : CA:GL:3120010809-14

Date : 20.07.2012

JOI No 1212804776

Report Control No. 3125010933

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 : SHRENGDAG(155.8)/SERENGDAG(140.07)/JALIM & SANAI BAUXITE MINES
(SHRENGDAG PLATEAU)
PROTOCOL : GENSOP/CALLAB-116
TEST START DATE : 20.07.2012
TEST END DATE : 20.07.2012

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 (L & TPC -300)	04.07.2012 (14:30 Hrs)	81	75
2	DUMPER (ASHOK LEYLAND- H6DTI)	04.07.2012 (14:40 Hrs)	80	75
3	PAYLODER (TWL 3036)	04.07.2012 (14:50 Hrs)	89	75
4	JACK HAMMER	04.07.2012 (15:00 Hrs)	94	75
5	COMPRESSOR (INGERSOLL RAND P-400)	04.07.2012 (15:10 Hrs)	89	75
6	WAGON DRILL (ATLAS COPCOROC -200)	04.07.2012 (15:20 Hrs)	89	75

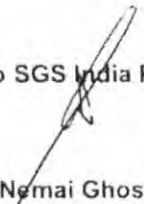
****End of Report**

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. Nirmai Ghosh
Manager-Laboratory

Page 1 of 1

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Member of the SGS Group (S, S, S, S, S)



TEST REPORT

Report No. : CA:GL:3120010512

DATE : 24/07/2012

JOE No. : 1212804665

Report Control No. 3125011205

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 SHRENGDAG (155.81)SERENGDAG(140.07)JALIM & SANAI(BAUXITE MINES)
(SHERENGDAG PLATEAU), LOCATION SHRENGDAG(155.81)(COREZOF
DATE OF SAMPLING 02.07.2012 TO 03.07.2012
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:3120010513

DATE : 24/07/2012

JOE No. : 1212804665

Report Control No. 3125011204

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:SHRENGDAG (155.81)SERENGDAG(140.07)JALIM &SANAI(BAUXITE MINES)
 (SHERENGDAG PLATEAU). LOCATION PAURNI VILLAGE(BUFFER ZONI)
DATE OF SAMPLING 02.07.2012 TO 03.07.2012
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*		1.7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	7.1 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	80.2 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	45.2 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:3120010514

DATE : 24/07/2012

JOE No 1212804665

Report Control No 3125011203

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: SHRENGDAG (155.81)SERENGDAG(140.07)JALIM & SANAI(BAUXITE MINES)
 (SHERENGDAG PLATEAU), LOCATION : SERENGDAG(140.07)(COREZON)
 DATE OF SAMPLING 03.07.2012 TO 04.07.2012
 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*		1.7ppm(8h)
OXIDES OF NITROGEN (NO _x)	IS 5182 PART 6 2006	8.2 µg/m ³		80 µg/m ³
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	85.3 µg/m ³		100 µg/m ³
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	43.6 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. Nimai Ghosh
 Manager Laboratory

Page 1 of 1

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TEST REPORT

Report No. : CA:GL:3120010515

DATE : 24/07/2012

JOE No. 1212804665

Report Control No. 3125011202

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 SHRENGDAG (155 81)SERENGDAG(140 07)JALIM &SANAI(BAUXITE MINES)
(SHERENGDAG PLATEAU), LOCATION JALIM & SANAI(COREZONE)
DATE OF SAMPLING 03.07.2012 TO 04.07.2012
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:3120010516

DATE : 24/07/2012

JOE No 1212804665

Report Control No 3125011201

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 SHRENGDAG (155.81)SERENGDAG(140.07)JALIM & SANAI(BAUXITE MINES)
(SHERENGDAG PLATEAU), LOCATION KACHKI VILLAGE(BUFFER ZONE)

DATE OF SAMPLING 04 07 2012 TO 05 07 2012
SAMPLE RECD ON 18/07/2012
TEST START DATE 18/07/2012
TEST END DATE 24/07/2012

Table with 4 columns: TESTS, PROTOCOL, RESULT, REQUIREMENT/LIMIT. 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:3120010517

DATE : 24/07/2012

JOE No. : 1212804665

Report Control No 3125011200

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 SHRENGDAG (155 81)SERENGDAG(140 07)JALIM &SANAI(BAUXITE MINES)
(SHERENGDAG PLATEAU), LOCATION JALIM VILLAGE(BUFFER ZONE)
DATE OF SAMPLING 04.07.2012 TO 05.07.2012
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*		1.7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6.2006	7.5 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS 5182(PART 23)2006	77.6 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	27.6 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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Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010518

DATE : 24/07/2012

JOE No : 1212804665

Report Control No. 3125011199

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 SHRENGDAG (155 81)SERENGDAG(140 07)JALIM &SANAI(BAUXITE MINES)
 (SHERENGDAG PLATEAU), LOCATION HARUP VILLAGE(BUFFER ZONE)
DATE OF SAMPLING 05.07.2012 TO 06.07.2012
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	8.9 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS.5182(PART 23)2006	62.4 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	32.4 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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TEST REPORT

Report No. : CA:GL:3120010561

DATE : 26/07/2012

JOE No : 1212804675

Control No 3125011416

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:SHRENGDAG(155.81)/SERENGDAG(140.07)/JALIM & SANAI BAUXITE MINES(SHRENGDAG PLATEAU) LOCATION : SHRENGDAG VILLAGE(BOREWELL HAND PUMP)
COLLECTED ON 05.07.2012
REGISTERED ON 18/07/2012
TEST START DATE 18/07/2012
TEST END DATE 26/07/2012

Table with 5 columns: TESTS, PROTOCOL, RESULT, REQUIREMENT/LIMIT (As per IS 10500:1991(REAFF 1993)), Desirable, Permissible. Rows include ALKALINITY (as CaCO3), ALUMINIUM (as Al), ANIONIC DETERGENTS (as MBAS), ARSENIC (as As), and BORON.

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TEST REPORT

Report No. : CA:GL:3120010561

DATE : 26/07/2012

JOE No. 1212804675

Control No. 3125011416

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)	4.04 mg/l	75mg/l	200mg/l
CHLORIDE (as Cl)	Clause 2 of IS 3025 Part 32:1988(Reaff. 1999)	9.29 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)	5.81 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

Page 2 of 4

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TEST REPORT

Report No. : CA:GL:3120010561 **DATE : 26/07/2012**

JOE No. : 1212804675 Control No. :3125011416

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
MANGANESE	IS:3025(PART 59) 2006	0.05 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)	1.36 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)	6.72 *	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)	13.13 mg/l	300mg/l	600mg/l

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TEST REPORT

Report No. : CA:GL:3120010561

DATE : 26/07/2012

JOE No. : 1212804675

Control No.:3125011416

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)	89.4	5.0NTU	10NTU
ZINC (as Zn)	IS 3025 Part 49:1991(Reaff.2003) BY ICPOES	0.11 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 *****

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Dr.Nemai Ghosh
Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010578

DATE : 28/07/2012

JOE No. 1212804680

Control No. 3125011550

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

AMPLE QTY. 6.5L APP

MARKS ON SAMPLE SITE : SHRENGDAG(155.81), SERENGDAG(140.07)
JALIM & SONAL BAUXITE MINES(SHRENGDOG PLATEAU)
LOCATION : SPRING SHRENGDOG VILLAGE

COLLECTED ON 05.07.2012

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)	6.27 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:3120010578

DATE : 28/07/2012

JOE No. : 1212804680

Control No. : 3125011550

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)	1.62 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

Page 2 of 4

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TEST REPORT

Report No. : CA:GL:3120010578 **DATE : 28/07/2012**

JOE No. 1212804680

Control No. 3125011550

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)	<0.50 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)	6.62 *	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)	7.07 mg/l	300mg/l	600mg/l

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TEST REPORT

Report No. : CA:GL:3120010578 DATE : 28/07/2012

JOE No. : 1212804680

Control No.:3125011550

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
			As per IS 10500:1991(ReAFF 1993)	
TURBIDITY(in NTU)	IS 3025:PART 10 :1984(Reaff.2002)	0.44	5.0NTU	10NTU
ZINC (as Zn)	IS 3025 Part 49:1991(Reaff.2003) BY ICPOES	0.02 mg/l	5mg/l	15mg/l
TOTAL DISSOLVED SOLIDS	IS 3025:PART 16:1984(Reaff.2002)	16 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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TEST REPORT

Report No. : CA:GL:3120010579

DATE : 28/07/2012

JOE No. : 1212804680

Control No.:3125011551

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 : SHRENGDAG(155.81), SERENGDAG(140.07)
JALIM & SONAL BAUXITE MINES(SHRENGDOG PLATEAU)
LOCATION : SPRING CHIROPAT VILLAGE
COLLECTED ON 05.07.2012
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 CaCO3)	IS 3025:PART 23 :1986(Reaff.1998)	5.48 mg/l	200mg/l	600mg/l
ALUMINIUM (as Al)	IS 3025 : Part 55 : 2003	0.03 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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TEST REPORT

Report No. : CA:GL:3120010579

DATE : 28/07/2012

JOE No. : 1212804680

Control No.:3125011551

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)	1.62 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

Page 2 of 4

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TEST REPORT

Report No. : CA:GL:3120010579	DATE : 28/07/2012
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JOE No. : 1212804680

Control No.:3125011551

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)	<0.50 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)	6.7 *	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)	6.06 mg/l	300mg/l	600mg/l

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TEST REPORT

Report No. : CA:GL:3120010579

DATE : 28/07/2012

JOE No. 1212804680

Control No. 3125011551

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
TURBIDITY(in NTU)	IS 3025:PART 10 :1984(Reaff.2002)	2.12	5.0NTU	10NTU
ZINC (as Zn)	IS 3025 Part 49:1991(Reaff.2003) BY ICPOES	0.08 mg/l	5mg/l	15mg/l
TOTAL DISSOLVED SOLIDS	IS 3025:PART 16:1984(Reaff 2002)	14 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 black 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