

Ref No: HIL/LHD/ VP (M)/MoEF/ 123

Date: 22.05.13

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

Sub: Compliance Report of EC conditions for Pakhar (35.12 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Lohardaga, Jharkhand for the period Oct' 2012 - March' 2013.

Ref: Environmental Clearance letter no J-11015/137/2006-IA II (M) dated 5th April 2007

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Pakhar** (35.12 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Lohardaga, Jharkhand for the period **Oct'** 2012 - **March'** 2013.

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 Clearence

<u>PAKHAR (35.12 Ha)BAUXITE MINES</u> <u>Period : Oct'12 –March'13</u> J-11015/137/2006-IA II (M) dated 5th April 2007

Sl No	Conditions	Compliance Status
	Specific Conditions	
1	All the conditions stipulated by SPCB in their NOC shall be effectively implemented.	Complied. Mining operations closed w.e.f 08.06.2009
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.	Complied.
3.	Environmental clearance is subject to grant of forestry clearance, Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 3.45ha forestland shall be obtained before starting mining operation in that area.	Mining operations closed w.e.f 08.06.2009
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.	Mining operations closed w.e.f 08.06.2009.
5	The project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operation.	Complied
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.	Mining operations closed w.e.f 08.06.2009
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 vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six monthly basis.	Mining operations closed w.e.f 08.06.2009

8	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.	08.06.2009
	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.	
9	Plantation shall be raised in an area of 24.83ha 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.	Already 8 ha area has been planted in and around the mine/Plateau area.
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.	Mining operations closed w.e.f 08.06.2009
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 (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.	Mining operations closed w.e.f 08.06.2009
12	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	Mining operations closed w.e.f 08.06.2009
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.	Mining operations closed w.e.f 08.06.2009
14	Drills should either be operated with dust extractors or should be equipped with water injection system.	Mining operations closed w.e.f 08.06.2009

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.	Mining operations closed w.e.f 08.06.2009.
16	Consent to operate should be obtained from SPCB prior to start of enhanced production from the mine.	Mining operations closed w.e.f 08.06.2009
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.
18	The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Indian Python 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.	Mining operations closed w.e.f 08.06.2009
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.	Final Mine Closure plan (FMCP) submitted at IBM for approval.

GENERAL CONDITIONS

Sl	Conditions	Compliance Status
No		
1	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forest	Mining operations closed w.e.f 08.06.2009
2	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.	Mining operations closed w.e.f 08.06.2009
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.	Mining operations closed w.e.f 08.06.2009

5	Data on ambient air quality (RPM, SPM, SO ₂ , NOx) 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. Fugitive dust emission from all the sources	. Mining operations closed w.e.f 08.06.2009 Mining operations closed w.e.f 08.06.2009
	should be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points should be provided and properly maintained.	
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.	Mining operations closed w.e.f 08.06.2009.
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.	Mining operations closed w.e.f 08.06.2009
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.	Mining operations closed w.e.f 08.06.2009
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. (Annexure).
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.
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 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.	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 Office, 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 during our six monthly report bearing letter no HIL/GMO(M)/ENV/142dated 23.05.2007.

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date

: 18/03/2013

Report No : KG13-001949.001

JOE No : KG13-001949

Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING

Report Control No

: KGR0000012045

Client Address

: Hindalco Industries Limited(Mines Division) : Lohardaga,

Postal Code

: 835203

: Jharkhand

Country Sample Type

; India

Received

: AMBIENT AIR QUALITY MONITORING : 12/03/2013

Registered

: 12/03/2013

Marks on Sample

: Location : Mine Lease Area, date : 05.03.2013

Sampling Site

: Pakhar(8.09)/Pakhar(15.58)/Pakhar(115.13)/Pakhar(109.507) Bauxite Mines(Pakhar(109.507) Bauxit

Test Start/End Date : 12/03/2013 - 18/03/2013

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
Particulate Matter (PM10)	IS:5182 (Part-23):2006		~~~~	Min	Max
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	73	ug/m3	-	100
Oxides of Nitrogen (NOx)		36.41	ug/m3		60
Sulphur Dioxide (SO2)	IS:5182 (Part-6):1975 (Reaff.2004)	7.62	ug/m3	5.	80
Carbon Monoxide	IS:5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3		80
ark : CO Analyzed at site.	By NDIR Spectroscopy.	< 0.10	PPM		

Page 1 of 2

WARNING The sample(s) to which the findings recorded herein (the 'Findings') relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 of the Company.

The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval. SGS India Pvt. Ltd.

SGS India Private Limited, CS Plot -512(p). Mouza, Hanspukuria, Diamond Harbour Road PO-Joka. South 24 Parganas Kolkata - 700104 Phone +91.33 64996700/6701 Regd & Corp. Off. SGS House: 4B, A.S. Marg, Vikhroli (West), Mumba: 400083. Tel: (022) 25798421 to 28 Fax. (022) 25798431 to 35 www.sas.com



SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date

: 18/03/2013

Report No : KG13-001949.001

JOE No : KG13-001949

Report Control No

: KGR0000012045

Per pro SGS India Private Ltd

Marmo

Satya Manna Section Incharge - ENVI **Authorized Signatory**

****End of Report****

WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's to the origin or source from which the sample(s) is/are said to be extracted.

'This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at its advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client and this document does not expensibility is to its Client and this document does not expensibility in the content of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 of the Company

This document cannot be reproduced except in full, without prior written approval

SGS India Private Limited, CS Plot -512(p), Mouza, Hanspukuria Diamond Harbour Road PO-Joka, South 24 Parganas Kolkata - 700104 Phone: +91 33 64996700/6701 Regd & Corp. Off.: SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel: (022) 25798421 to 28 Fax. (022) 25798431 to 35 www.sgs.com



SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date

: 18/03/2013

Report No : KG13-001949.002

JOE No : KG13-001949

Client Name

Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING : KGR0000012045

Client Address

: Hindalco Industries Limited(Mines Division)

Postal Code

: Lohardaga,

: 835203 : Jharkhand

State

Country Sample Type

: India

Received

: AMBIENT AIR QUALITY MONITORING : 12/03/2013

Registered

: 12/03/2013

Marks on Sample

: Location : Kekrang Village, date : 05.03.2013

Sampling Site

: Pakhar(8.09)/Pakhar(15.58)/Pakhar(115.13)/Pakhar(109.507) Bauxite Mines(Pa

Test Start/End Date : 12/03/2013 - 18/03/2013

Analysis	Method	Result	Unit	Requirement/Limit as Per	
Particulate Matter (PM10)	IS:5182 (Part-23):2006			Min	Max
Particulate Matter (PM2.5)		66	ug/m3		100
Oxides of Nitrogen (NOx)	USEPA CFR(40) Appendix-L	27.35	ug/m3		60
Sulphur Dioxide (SO2)	IS:5182 (Part-6):1975 (Reaff 2004)	10.57	ug/m3	*	80
Carbon Monoxide	IS:5182 (Part-2):2001 (Reaff:2006)	<5.00	ug/m3	(#)	80
ark : CO Analyzed at site.	By NDIR Spectroscopy.	< 0.10	PPM		15/5

WARNING. The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's to the origin or source from which the sample(s) is/are said to be extracted.

"This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions, if any. The Company's Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of penshable items) and 30 of the Company.

The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval.

SGS India Private Limited, CS Plot -512(p). Mouza, Hamspukuria, Diamond Harbour Road PO-Joka, South 24 Parganas Kolkata - 700104 Phone +91 33 64996700/5701 Rend & Carp. Off - SGS House, 4B, A.S. Marq, Vikhrofi (West), Mumbal-400053. Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.scs.com



SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date

: 18/03/2013

Report No : KG13-001949.002

JOE No : KG13-001949

Report Control No

: KGR0000012045

Per pro SGS India Private Ltd

Marmag -Satya Manna

Section Incharge - ENVI **Authorized Signatory**

****End of Report****

WARNING. The sample(s) to which the findings recorded herein (the 'Findings') relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's to the ongin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Cherit's instructions, if any. The Company's Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 of the Company

I see the British Land CS Bits 512(a) More than 10 and 10 and

SGS India Private Limited, CS Plot -512(p), Mouza, Hanspukuna, Diamond Harbour Road PO-Joka, South 24 Parganes Kolkala - 700104 Phone: +91 33 64996750/6701

Regd & Corp. Off. SGS House, 48, A.S. Maro, Victoroli (West), Mumbai-400083. Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sqs.com

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date

: 18/03/2013

Report No : KG13-001949.003

JOE No : KG13-001949

Report Control No Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING : KGR0000012045

Client Name

Client Address

: Hindalco Industries Limited(Mines Division) ; Lohardaga,

Postal Code

: 835203

State

: Jharkhand

Country

: India

Sample Type

Received Registered : AMBIENT AIR QUALITY MONITORING : 12/03/2013

: 12/03/2013

Marks on Sample

: Location : Semardih Village, date : 06.03.2013

Sampling Site

: Pakhar(8.09)/Pakhar(15.58)/Pakhar(115.13)/Pakhar(109.507) Bauxite Mines(Pakhar(109.507) Bauxit

Test Start/End Date : 12/03/2013 - 18/03/2013

Analysis	Method	Result	Unit	t Requirement/Limit as Pei NAAQS	
Particulate Matter (PM10)	IS:5182 (Part-23):2006			Min	Max
Particulate Matter (PM2.5)		78	ug/m3	1.5	100
Oxides of Nitrogen (NOx)	USEPA CFR(40) Appendix-L	32.60	ug/m3	*	60
Sulphur Dioxide (SO2)	IS:5182 (Part-6):1975 (Reaff.2004)	5.47	ug/m3	14	80
Carbon Monoxide	IS:5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3	÷	80
ark ; CO Analyzed at site.	By NDIR Spectroscopy.	< 0.10	PPM		1400.0004.0

WARNING: The sample(s) to which the findings recorded herein (the 'Findings') relate was(were) drawn and / or provided by the Client or by a third party acting at the Clients to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's any unauthorized alteration, forgery or falsification of the contant or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval SGS India Private Limited, CS Plot -512(p), Mouze, Hanspukuria, Diamond Harbour Road PO-Joka, South 24 Parganias Kulkatu - 700104 Phone: +91 33 649967096701

Regd & Corp. Off. SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel. (022) 25798421 to 25 Fax. (022) 25798431 to 35 www.sqs.com



SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date

: 18/03/2013

Report No : KG13-001949.003

JOE No : KG13-001949

Report Control No : KGR0000012045

Per pro SGS India Private Ltd

Marma > Satya Manna

Section Incharge - ENVI **Authorized Signatory**

****End of Report****

Page 2 of 2

WARNING. The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/lernis_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 of the Company

The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval SGS India Pvt. Ltd.

SGS India Private Limited, CS Plot -512(p) Mouza, Hanspukuria Diamond Harbour Road PO-Joka, South 24 Parganas Kolkata - 700104 Phone, +91 33 649967006701 Regd & Corp. Off : SGS House, 4B. A.S. Marg, Vikhiroli (West), Mumbai-40083. Tel. (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com



SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date

: 18/03/2013

Report No : KG13-001949.004

JOE No : KG13-001949

Report Control No : KGR0000012045

Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING

Client Address

: Hindalco Industries Limited(Mines Division)

Postal Code

: Lohardaga, : 835203

: Jharkhand

State

Country Sample Type : India

Received

: AMBIENT AIR QUALITY MONITORING

: 12/03/2013

Registered

: 12/03/2013

Marks on Sample Sampling Site

: Location : Patratoli Village, date : 14.02.2013 Pakhar(8.09)/Pakhar(15.58)/Pakhar(115.13)/Pakhar(109.507) Bauxite Mines(Pakhar)

Test Start/End Date : 12/03/2013 - 18/03/2013

Analysis	Method	Result	Unit		ent/Limit as Per NAAQS
Particulate Matter (PM10)				Min	Max
	IS:5182 (Part-23):2006	54	ug/m3		100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	24.35	Fire Inch Ph		
Oxides of Nitrogen (NOx)		24.53	ug/m3	0.40	60
a construction and the second of the second	IS:5182 (Part-6):1975 (Reaff.2004)	6.48	ug/m3		80
Sulphur Dioxide (SO2)	IS:5182 (Part-2):2001 (Reaff.2006)	16.89	ug/m3		80
Carbon Monoxide ark: CO Analyzed at site.	By NDIR Spectroscopy.	<0.10	PPM		

Page 1 of 2

WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.ags.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval

SGS India Pvt. Ltd.

SGS India Private Limited CS Plot -512(p) Mouze, Hanspukuria Diemond Harbour Road PO-Joka, South 24 Parganus Kolksta - 700104 Phone. +91 33 64996709/5701 Read & Corp. Off: SGS House, 48, A.S. Marg, Vikhroli (West), Mumbai-400083, Tel.; (022) 25798421 to 28 Fax.; (022) 25798431 to 35 www.sqs.com



SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Report Control No

Print Date

: 18/03/2013

Report No : KG13-001949.004

JOE No : KG13-001949

: KGR0000012045

Per pro SGS India Private Ltd

MONTHO ---

Satya Manna Section Incharge - ENVI **Authorized Signatory**

****End of Report****

Page 2 of 2

WARNING: The sample(s) to which the findings recorded herein (the 'Findings') relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of Nability, indemnification and jurisdiction issues defined therein. Any holder of this document sole responsibility is to its Client and this document does not expensive the time of its intervention only and within the limits of Client's instructions, if any. The Company's Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of penshable items) and 30 of the Company.

The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval. SGS India Private Limited, CS Plot -512(p), Mouza, Hanspukuria Dismond Harbour Road PO-Joka, South 24 Parganes Kolkata - 700104 Phone +91 33 64996700/6701 SGS India Pvt. Ltd.

Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com



SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date

: 22/03/2013

Report No : KG13-001953.001

JOE No : KG13-001953

Sample Described by Customer as : SOIL(COMPOSITE)

Report Control No

: KGR0000012696

Client Name

: Hindalco Industries Limited(Mines Division)

Client Address Postal Code

: Lohardaga, : 835203

State

: Jharkhand

Country

: India

Sample Type

: SOIL(COMPOSITE)

Received

: 12/03/2013

Registered

: 12/03/2013

Marks on Sample

: Location:Quarry No. 96.25 Reclaimed Area

Sampling Site

: Pakhar(8.09)/(15.58)/(115.13)/(109.507) Bauxite Mines(Pakhar plateau)

Sample Collected

: 05.03.2013

Quantity

; 2.5Kg app

Test Start/End Date : 12/03/2013 - 21/03/2013

Analysis	Method	Result	Limit of Reporting (LOR)	Unit
Conductivity (1:5) Soil Suspention. (1:2 aqueous solution)	F.A.U.N (2007)	30.6	1.00	μs/cm
pH (1:2) Soil Suspention (1:2 aqueous solution) Porosity	F.A.U.N (2007)	6	0.50	ps/cm
Bulk Density	F.A.U.N (2007) By Bulk Density Apparatus	48.89	*	%
Phosphorus (as P)	F.A.U.N (2007)	1.17	0.10	gram/ml
Texture	F.A.U.N (2007)	<20.000	20.00	mg/kg
Clay	F.A.U.N (2007)	Clay loam	1.E.	3.73
Sand		39.3	5.00	%
Silt	F.A.U.N (2007)	33.2	1.00	%
Available Chloride (as CI)	F.A.U.N (2007)	27.5	1.00	%
S	Soil & Agriculture Organization (U.N-2007)	<20.00	20.00	500000000000
Available Nitrogen	Food & Agriculture Organization (U.N-2007)	358.16	20.00	mg/kg mg/kg

WARNING. The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's to the origin or source from which the sample(s) is/are said to be extracted.

"This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at its advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of pershable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval

SGS India Private Limited.CS Piot -512(p) ,Mouza, Hanspukuria Diamond Harbour Road PO-Joka, South 24 Parganias Kolkata - 700104 Phone: +91 33 649967006701 Read & Corp. Off : SGS House, 48, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax . (022) 25798431 to 35 www.scs.com



SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date

: 22/03/2013

Report No : KG13-001953.001

JOE No : KG13-001953

Analysis	Report Control No : Ki	GR0000012696		
		Result	Limit of Reporting (LOR)	Unit
Available Potassium (as K)	Soil & Water Book By P.K. Gupta	1618.76	1.00	
Available Magnesium (as Mg)	Soil & Water Book By P.K.	2405.00	1.00	mg/kg
Lead (as Pb)	Gupta USEPA 3052	2195.32	1.00	mg/kg
Chromium (as Cr)	USEPA 3052	10.36	2.00	mg/kg
Mercury (as Hg)		54 80	2.00	mg/kg
Total Organic Matter	USEPA 3052	<1.00	1.00	mg/kg
Total Organic Matter	Black & Walkely Wet Digestion Method	0.88	0.01	%

Per pro SGS India Private Ltd

Satya Manna

Section Incharge - ENVI

Authorized Signatory

****End of Report****

uarma :

WARNING. The sample(s) to which the findings recorded herein (the 'Findings') relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's Any unauthorized alteration, forgery or faisification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of penshable items) and 30 of the Company SGS India Pvt. Ltd.

SGS India Private Limited.CS Plot -512(p) Mouza, Hanspukuria Diamond Harbour Road PG-Joka: South 24 Parganius Kolkata - 700104 Phane: +91 33 64996700/6701 Regd & Corp. Off. SGS House: 4B, A.S. Marg, Viktiroti (West), Mumbai-400683. Tel: (022) 25798421 to 29 Fax: (022) 25798431 to 35 www.sqx.com



SAMPLE COLLECTED BY SGS INDIA PVT, LTD.

Print Date

: 22/03/2013

Report No : KG13-001953.002

JOE No : KG13-001953

Sample Described by Customer as : SOIL(COMPOSITE)

Report Control No

: KGR0000012696

Client Name

; Hindalco Industries Limited(Mines Division)

Client Address Postal Code

: Lohardaga, : 835203 : Jharkhand

Country

State

: India

Sample Type

: SOIL(COMPOSITE)

Received

: 12/03/2013

Registered

: 12/03/2013

Marks on Sample Sampling Site

: Location:Quarry No. 270.59 Mineral 8 Minard Reclaimed area

Sample Collected

: Pakhar(8.09)/(15.58)/(115.13)/(109.507) Bauxite Mines(Pakhar plateau) : 05.03.2013

Quantity

: 2.5Kg app

Test Start/End Date : 12/03/2013 - 21/03/2013

Analysis	Method	Result	Limit of Reporting (LOR)	Unit
Conductivity (1:5) Soil Suspention.	F.A.U.N (2007)	30.8	1.00	µs/cm
pH (1:2) Soil Suspention (1:2 aqueous solution) Porosity	F.A.U.N (2007)	6	0.50	pardii
Bulk Density	F.A.U.N (2007) By Bulk Density Apparatus	51.2		%
Phosphorus (as P)	F.A.U.N (2007)	1.02	0.10	gram/ml
Texture	F.A.U.N (2007)	<20.000	20.00	mg/kg
Clay	F.A.U.N (2007)	Clay loam	*	
Sand	F.A.U.N (2007)	29.3	5.00	%
Silt	F.A.U.N (2007)	43.2	1.00	%
Available Chloride (as CI)	Soil & Agriculture Organization	27.5	1.00	%
Available Nitrogen	(U.N-2007) Food & Agriculture	<20.00	20.00	mg/kg
	Organization (U.N-2007)	302.31	20.00	mg/kg

WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's to the origin or source from which the sample(s) is/are said to be extracted.

"This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval

SGS India Private Limited, CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Road PO-Joka, South 24 Parganas Kolkata - 700104 Phone. +91 33 64996700/6701

Read & Corp. Off : SGS House, 4B, A.S. Marg. Vikhrofi (West), Mumbai-400083. Tel. (022) 25798421 to 26 Fax. (022) 25798431 to 35 www.sqs.com



Analysis

Lead (as Pb)

Chromium (as Cr)

Total Organic Matter

Mercury (as Hg)

Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report Control No

Soil & Water Book By P.K.

Gupta Soil & Water Book By P.K.

Black & Walkely Wet Digestion

Method

Gupta

Method

USEPA 3052

USEPA 3052

USEPA 3052

Print Date

< 1.00

0.63

: 22/03/2013

mg/kg

%

Report No : KG13-001953.002

Available Potassium (as K)

Available Magnesium (as Mg)

IOF No . KG13 001050

JOE No :	KG13-001953
Limit of Reporting (LOR)	Unit
1.00	mg/kg
1.00	mg/kg
2.00	mg/kg
2.00	mg/kg
	Limit of Reporting (LOR) 1.00 1.00 2.00

Per pro SGS India Private Ltd

1.00

0.01

Satya Manna

warma :-

Section Incharge - ENVI

Authorized Signatory

****End of Report****

WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not experise to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 of the Company

1 see that next tested are to be retained as specified. This document cannot be reproduced except in full, without prior written approval SGS India Pvt. Ltd.

SGS India Private Limited, CS Plot -512(p). Mouza, Hanspukuria, Diamond Harbour Road PO-Joka, South 24 Parginus Kutkata - 700104 Phone. +91.33 64996700/6701 Regd & Corp. Off.; SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel. (022) 25798421 to 28 Fax. (022) 25798431 to 35 www.sqs.com



SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date: 02/04/2013

Report No : KG13-002087.004

JOE No: KG13-002087

Report Control No

: KGR0000013912

Sample Described by Customer as:

SPRING WATER

Client Name

: Hindalco Industries Limited(Mines Division)

Client Address

: Lohardaga,

Postal Code

: 835203

State

: Jharkhand

Country

: India

Sample Type

: SPRING WATER

Received

: 18/03/2013

Registered

: 18/03/2013

Marks on Sample

: Location: Pakhar Bangla Path

Quantity Sample Collected

: 5.5L app : 10.03.2013, time : 10.30 am

Test Start/End Date : 18/03/2013 - 01/04/2013

Analysis	Method		Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissible
Colour	IS:3025 (Part-4):1983 (Reaff 2006)	5.0	Hz	5	15
Odour	IS:3025 (Part-5):1983 (Reaff,2006)	Agreeable		Agreeable	Agreeable
Taste	IS:3025 (Part-8):1983 (Reaff.2006)	Agreeable		Agreeable	Agreeable
pH	IS 3025 (Part-11) 1983 (Reaff 2006)	7.10*		6.5	8.5
Total Hardness (as CaCO3)	IS:3025 (Part-21):1983 (Reaff 2006)	4.04	mg/L	200	600
Iron (as Fe)	IS:3025 (Part-2)	0.28	mg/L	0.3	No relaxation
Fluoride (as F)	IS:3025 (Part-60):2008	0.30	mg/L	10	1.5
Residual Free Chlorine	IS:3025 (Part-26) 1986 (Reaff 2003)	<0.10	mg/L	0.2	10
Chloride (as CI)	IS:3025 (Part-32):1988 (Reaff, 1999)	5.03	mg/L	250	1000
Total Dissolved Soilds	IS:3025 (Part-16:1984	12.60	mg/L	500	2000

Page 1 of 3

Absent

per 100mi

Absent/100m

IS:1622:1981(Reaff.2003)

WARNING. The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without and written approval of the Company

SGS India Private Limited CS Plot. 512(p). Mouza. Hanspukuria Diamond Harbour Road PO-Joka. South 24 Parganas. Kolkata - 700104 Phone +91.33.8489670096701

E.coli

Regif & Corp. Off : SGS House, 48, A.S. Marg, Vikhroli (West), Mambai 400083. Tel : (022) 25798421 (0.28 Fex., (022) 25798431 to 35 www.sus.com

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/toms.and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to medical extent of the law.



SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date: 02/04/2013

Report No : KG13-002087.004

JOE No: KG13-002087

Änalysis	Report Control No	: KGR0000013912	DEEDY OF THE		
	Method Resu		sult Unit	Requirement/Limit As per IS:10500:2012	
			MAX.000 1000 1000 1000 1000 1000 1000 1000	Acceptable	Permissible
Magnesium (as Mg)	IS:3025 (Part-46):1994 (Reaff.1999)	<1.00	mg/L	30	100
Calcium (as Ca)	IS:3025 (Part-40):1991 (Reaff 2003)	1.21	mg/L	75	200
Copper (as Cu)	IS 3025 (Part-2)	<0.01	mg/L	0.05	1.5
Manganese (as Mn)	IS:3025 (Part-2)	0.02	mg/L	0.1	0.3
Sulphate (as SO4)	IS:3025 (Part-24):1986 (Reaff.1998)	<2.00	mg/L	200	400
Nitrate (as NO3)	IS:3025 (Part-34):1988 (Reaff.1999)	1.80	mg/L	45	No relaxation
Phenolic Compound (as C6H5OH)	IS:3025 (Part-43):1992 (Reaff.2003)	< 0.001	mg/L	0 001	0.002
Mercury (as Hg)	IS:3025 (Part-48):1994 (Reaff.1999)	<0.001	mg/L	0.001	No relaxation
Cadmium (as Cd)	IS:3025 (Part-41):1992 (Reaff.2003)	<0.003	mg/L	0.003	No relaxation
Scienium (as Se)	IS:3025 (Part-2)	<0.005	mg/L	0.01	No relaxation
Arsenic (as As)	IS:3025 (Part-37):1988 (Reaff.1999)	<0.005	mg/L	0.01	No relaxation
Cyanide (as CN)	IS:3025 (Part-27):1986 (Reaff.2003)	<0.020	mg/L	0 05	No relaxation
Lead (as Pb)	IS:3025 (Part-47):1994 (Reaff.1999)	0.024	mg/L	0.01	No relaxation
Zinc (as Zn)	IS 3025 (Part-2)	<0.01	mg/L	5	15
Anionic Surface Active Agent (as MBAS)	IS:13428:2005; Annex K	<0.05	mg/L	0.2	10
Chromium (as Cr)	IS:3025 (Part-2)	<0.01	mg/L	0.05	No relaxation
Mineral Oil	IS 3025 (Part-39) :1991 (Reaff.2003)	<0.01	mg/L	0.5	No relaxation
Total Alkalinity (as CaCO3)	IS:3025 (Part-23):1986 (Reaff 2003)	5.24	mg/L	200	600
Aluminium (as AI)	IS:3025 (Part-55):2003	0.05	mg/L	0 03	0.2
Boron (as B)	IS:3025 (Part-57):2005	0.06	mg/L	0.5	10
Turbidity	IS:3025 (Part-10):1984 (Reaff 2006)	2.26	NTU	1	5
Coliform bacteria	IS 1622-1981 (Reaffirmatio 2003)	n Present	per 100ml		

Page 2 of 3

WARNING The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability and to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client is instructions, if any transaction documents, and unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fulfield extent of the law.

Usess otherwise stated the results shown in this test report, refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 36 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior writtens.

approval of the Company

SGS India Private Limited CS Plot -512(p) Mouza, Hanspukuria, Diamond Harbour Road PO-Joka, South 24 Parganas Kolkata - 700104 Phone +91 33 649957005701 Regit & Corp. Off : SGS House, 48, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com



SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date: 02/04/2013

Report No: KG13-002087.004

JOE No: KG13-002087

Analysis

Report Control No

: KGR0000013912

Method

Result

Unit

Requirement/Limit As per IS:10500:2012

Acceptable Permissible

Remark: *Analyzed at site.

Per pro SGS India Private Lt

W. O. allended &

Asish Chakraborty Laboratory Manager Authorized Signatory

****End of Report****

Page 3 of 3

WASNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no hathlifty acting the company of the sample(s) is/are said to be extracted.

This indument is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at accument is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions if any transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fulfield extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of penshable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written

SGS India Pvt. Ltd.

SGS India Private Limited CS Plot -512(p) .Mouza. Hanspukuria,Diamond Harbour Road PQ-Joka, South 24 Pargamas Krikata - 700104 Phone +91.33 549967006701 Regd & Corp. Off | SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbar-400083. Tel ; (022) 25798421 to 28 Fax (022) 25798431 to 35 years again



Print Date: 02/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No: KG13-002087.005

JOE No: KG13-002087

Report Control No : KGR0000013912

Result

Sample Described by Customer as : SPRING WATER

Client Name

: Hindalco Industries Limited(Mines Division)

Client Address

: Lohardaga,

Postal Code

: 835203

State

: Jharkhand

Country Sample Type ; India : SPRING WATER

; 18/03/2013

Received

: 18/03/2013

Registered Marks on Sample

Quantity

: Location: Pakhar Sarnapath ; 5.5L app

Sample Collected

: 10.03.2013, time : 11.00 am

Test Start/End Date : 18/03/2013 - 01/04/2013

Alluly 313	Ana	ysis
------------	-----	------

M	-	h -	
IN	et	110	u

Unit

Requirement/Limit As per IS:10500:2012

				Acceptable	Permissible
Colour	IS:3025 (Part-4):1983 (Reaff.2006)	5.0	Hz	5	1:
Odour	IS:3025 (Part-5):1983 (Reaff.2006)	Agreeable		Agreeable	Agreeable
Taste	IS:3025 (Part-8):1983 (Reaff:2006)	Agreeable		Agreeable	Agreeable
H	IS:3025 (Part-11):1983 (Reaff.2006)	7.10*		6.5	8.5
Total Hardness (as CaCO3)	IS:3025 (Part-21):1983 (Reaff 2006)	5.05	mg/L	200	600
ron (as Fe)	IS:3025 (Part-2)	0.09	mg/L	0.3	No relaxation
luoride (as F)	IS:3025 (Part-60):2008	<0.10	mg/L	1.0	1.5
Residual Free Chlorine	IS:3025 (Part-26):1986 (Reaff.2003)	<0.10	mg/L	0.2	1.0
Chloride (as CI)	IS:3025 (Part-32):1988 (Reaff 1999)	5.75	mg/L	250	1000
otal Dissolved Soilds	IS:3025 (Part-16:1984 (Reaff.1996)	15.60	mg/L	500	2000
.coli	IS:1622:1981(Reaff.2003)	Absent	per 100ml		Absent/100m

Page 1 of 3

WARNING. The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no happing with regard to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the

Chiess otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of penshable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Compa

SGS India Pvt. Ltd.

SGS India Private Limited.CS Plot. 512(p). Mouza, Hanspukuria Diamond Harbour Road PO-Joka, South 24 Parganas Kolkata. 700104 Phone. •kt 33 6499670096701 Regil & Corp. Off.: SGS House, 4B, A.S. Marg, Vikhroli (Wast), Mumbai-400083, Tel.: (022) 25798423 to 28 Fax: (022) 25798431 to 35 www.sgs.com



Print Date: 02/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002087.005

JOE No: KG13-002087

	Report Control No	: KGR0000013912		***************************************	
Analysis	Method	Result	Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissibi
Magnesium (as Mg)	IS:3025 (Part-46) :1994 (Reaff.1999)	<1.00	mg/L	30	100
Calcium (as Ca)	IS:3025 (Part-40) :1991 (Reaff.2003)	1.62	mg/L	75	500
Copper (as Cu)	IS:3025 (Part-2)	<0.01	mg/L	0.05	1 5
Manganese (as Mn)	IS 3025 (Part-2)	0.01	mg/L	0.1	0:
Sulphate (as SO4)	IS:3025 (Part-24):1986 (Reaff.1998)	<2.00	mg/L	200	400
Nitrate (as NO3)	IS:3025 (Part-34):1988 (Reaff.1999)	2.80	mg/L	45	No relaxation
Phenolic Compound (as C6H5OH)	IS.3025 (Part-43):1992 (Reaff.2003)	<0.001	mg/L	0 001	0 00.
Mercury (as Hg)	IS:3025 (Part-48):1994 (Reaff.1999)	<0.001	mg/L	0.001	No relaxation
Cadmium (as Cd)	IS:3025 (Part-41):1992 (Reaff.2003)	<0.003	mg/L	0 003	No relaxation
Selenium (as Se)	IS:3025 (Part-2)	<0.005	mg/L	0.01	No relaxation
Arsenic (as As)	IS:3025 (Part-37):1988 (Reaff.1999)	<0.005	mg/L	0.01	No relaxation
Cyanide (as CN)	IS:3025 (Part-27):1986 (Reaff.2003)	<0.020	mg/L	0 05	No relaxation
Lead (as Pb)	IS:3025 (Part-47):1994 (Reaff 1999)	0.021	mg/L	0.01	No relaxation
Zinc (as Zn)	IS:3025 (Part-2)	0.01	mg/L	5	15
Anionic Surface Active Agent (as MBAS)	IS:13428:2005: Annex K	<0.05	mg/L	02	1.0
Chromium (as Cr)	IS:3025 (Part-2)	< 0.01	mg/L	0.05	No relaxation
Mineral Oil	IS:3025 (Part-39):1991 (Reaff 2003)	<0.01	mg/L	0.5	No relaxation
Total Alkalinity (as CaCO3)	IS:3025 (Part-23):1986 (Reaff.2003)	5.52	mg/L	200	600
Aluminium (as AI)	IS:3025 (Part-55):2003	0.04	mg/L	0.03	0.2
Boron (as B)	IS:3025 (Part-57):2005	<0.05	mg/L	0.5	1.0
Turbidity	IS:3025 (Part-10):1984 (Reaff.2006)	3.35	NTU	1	5
Coliform bacteria	IS:1622-1981 (Reaffirmation 2003)	Present	per 100ml		

Page 2 of 3

WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liquidity to the origin or source from which the sample(s) is/are said to be extracted.

This sodument is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sigs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions, it any The Company's sole responsibility is to its Client and this document does not exponentee parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written Unless otherwise stated the results show.

The samples from regulatory bodies are to be retained as specified. This document of the Company approval of the Company SGS India Private Lanted CS Plot -512(p). Mouza, Hanspukuria Diamond Harbour Road PO-Joka. South 24 Parganas Kolkata - 700104 Phone +91 33 6499670090201

SGS India Private Lanted CS Plot -512(p). Mouza, Hanspukuria Diamond Harbour Road PO-Joka. South 24 Parganas Kolkata - 700104 Phone +91 33 6499670090201

SGS India Private Lanted CS Plot -512(p). Mouza, Hanspukuria Diamond Harbour Road PO-Joka. South 24 Parganas Kolkata - 700104 Phone +91 33 6499670090201



SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date: 02/04/2013

Report No : KG13-002087.005

JOE No: KG13-002087

: KGR0000013912

Analysis

Method

Report Control No

Result

Unit

Requirement/Limit As per IS:10500:2012

Acceptable Permissible

*Analyzed at site. Remark:

Per pro SGS India Private Lt

Mr draheadod /

Asish Chakraborty **Laboratory Manager** Authorized Signatory

****End of Report****

Page 3 of 3

WARNING. The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and I or provided by the Client or by a third party acting at the client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liantity with regard to the origin or source from which the sample(s) is/are said to be extracted,

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client is instructions at any transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the

Utilises of therwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of penshable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written some stated the Company.

SOS India Private Limited CS Plot -512(p) Mouza, Hanspukuria Diamond Harbour Road PO-Joka, South 24 Parganas Kolkata - 700104 Phose +91.33 64996/009761

Regd & Corp. Ott : SGS House, 48, A.S. Murg, Vikhuoli (West), Mumbai 400083. Tel : (022) 25798421 to 28 Fax. (022) 25798431 to 35 www.sqs.com



SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date: 02/04/2013

Report No : KG13-002087.006

JOE No: KG13-002087

Report Control No : KGR0000013912

Sample Described by Customer as : SPRING WATER

Client Name

: Hindalco Industries Limited(Mines Division)

Client Address

: Lohardaga,

Postal Code

: 835203

State

: Jharkhand

Country

; India

Sample Type

: SPRING WATER

Received

: 18/03/2013

Registered

: 18/03/2013

Marks on Sample

: Location: Pakhar : 5.5L app

Quantity Sample Collected

; 10.03.2013, time : 12.00 pm

Test Start/End Date : 18/03/2013 - 01/04/2013

Analysis

Mathad

	method Result		Unit	Requirement/Limit As per IS:10500:2012	
		0-04881110000000000000000000000000000000		Acceptable	Permissible
Colour	IS:3025 (Part-4):1983 (Reaff,2006)	5.0	Hz	5	15
Odour	IS:3025 (Part-5):1983 (Reaff.2006)	Agreeable		Agreeable	Agreeable
Taste	IS:3025 (Part-8):1983 (Reaff.2006)	Agreeable		Agreeable	Agreeable
рН	IS:3025 (Part-11):1983 (Reaff,2006)	7.00*		6.5	8.5
Total Hardness (as CaCO3)	IS:3025 (Part-21):1983 (Reaff.2006)	2.52	mg/L	200	600
Iron (as Fe)	IS:3025 (Part-2)	0.23	mg/L	0.3	No relaxation
Fluoride (as F)	IS:3025 (Part-60):2008	<0.10	mg/L	1.0	1.5
Residual Free Chlorine	IS:3025 (Part-26):1986 (Reaff.2003)	<0.10	mg/L	0.2	10
Chloride (as CI)	IS:3025 (Part-32):1988 (Reaff 1999)	<5.00	mg/L	250	1000
Total Dissolved Soilds	IS:3025 (Part-16:1984 (Reaff,1996)	9.00	mg/L	500	2000
E.coli	IS:1622:1981(Reaff.2003)	Absent	per 100ml		Absent/100m

Page 1 of 3

WARNING The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liansley with regard to the origin or source from which the sample(s) is/are said to be extracted.

This discument is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible of decument is advised that information contained hereon reflects the Company's findings the time of its intervention only and within the limits of Client's instructions if any reason documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 10 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written.

SGS India Pvt. Ltd.

/ SGS India Private Limited.CS Plot: 512(p) ,Mouza, Hanspukuna,Diamond Harbour Road PO-Joka, South 24 Parganias Kolkata - 700104 Phone - +91 33 649967006701 Regd & Corp., Off : SGS House, 4B. A.S. Marg. Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.cum



SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date: 02/04/2013

Report No : KG13-002087.006

JOE No : KG13-002087

			JUE No : KG13-002087			
Analysis	Report Control No : KGR0000013912 Method Result		Unit	Requirement/Limit As per IS:10500:2012		
			•	Acceptable	Permissibl	
Magnesium (as Mg)	IS:3025 (Part-46):1994 (Reaff.1999)	<1.00	mg/L	30	100	
Calcium (as Ca)	IS:3025 (Part-40):1991 (Reaff.2003)	<1.00	mg/L	75	200	
Copper (as Cu)	IS:3025 (Part-2)	< 0.01	mg/L	0.05	1.5	
Manganese (as Mn)	IS:3025 (Part-2)	0.02	mg/L	0.1	0.3	
Sulphate (as SO4)	IS:3025 (Part-24):1986 (Reaff.1998)	<2.00	mg/L	200	400	
Nitrate (as NO3)	IS:3025 (Part-34):1988 (Reaff 1999)	3.78	mg/L	45	No relaxation	
Phenolic Compound (as C6H5OH)	IS:3025 (Part-43):1992 (Reaff,2003)	< 0.001	mg/L	0.001	0.002	
Mercury (as Hg)	IS:3025 (Part-48):1994 (Reaff, 1999)	<0.001	mg/L	0.001	No relaxation	
Cadmium (as Cd)	IS:3025 (Part-41):1992 (Reaff.2003)	<0.003	mg/L	0.003	No relaxation	
Selenium (as Se)	IS:3025 (Part-2)	<0.005	mg/L	0.01	No relaxation	
Arsenic (as As)	IS:3025 (Part-37):1988 (Reaff.1999)	<0.005	mg/L	0.01	No relaxation	
Cyanide (as CN)	IS:3025 (Part-27):1986 (Reaff.2003)	<0.020	mg/L	0.05	No relaxation	
Lead (as Pb)	IS:3025 (Part-47):1994 (Reaff.1999)	0.018	mg/L	0.01	No relaxation	
Zinc (as Zn)	IS:3025 (Part-2)	0.04	mg/L	5	15	
Anionic Surface Active Agent (as MBAS)	IS:13428-2005; Annex K	<0.05	mg/L	0.2	10	
Chromium (as Cr)	IS:3025 (Part-2)	<0.01	mg/L	0.05		
Mineral Oil	IS:3025 (Part-39):1991 (Reaff.2003)	< 0.01	mg/L) 1 to 10 to	No relaxation No relaxation	
Total Alkalinity (as CaCO3)	IS:3025 (Part-23):1986	4.96	mg/L	200	600	
Aluminium (as AI)	(Reaff.2003) IS 3025 (Part-55) 2003	<0.03	mg/L	0 03		
Boron (as B)	IS:3025 (Part-57):2005	<0.05	mg/L	0.5	0.2	
Turbidity	IS:3025 (Part-10):1984 (Reaff,2006)	0.97	NTU	1	5	
Coliform bacteria	IS:1622-1981 (Reaffirmation 2003)	Present	per 100ml			

Page 2 of 3

WARNING The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at into his ways, sometimes and conditions intim. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions if any tonisaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to me fulfiest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of penshable items) and 30 approval of the Company.

The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written.

SGS India Pvt. Ltd.

/ SGS India Private Limited CS Plot -512(p) .Mouza: Hanspukuria,Djamond Harbour Road PO-Joka, South 24 Parganas Kolkata - 700104 Phone, +91 33 649967008701 Regd & Corp. OH ; SGS House, 49, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel ; (022) 25798421 to 28 Fax (022) 25798431 to 35 www.ags.com



SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date: 02/04/2013

Report No : KG13-002087.006

JOE No: KG13-002087

Report Control No : KGR0000013912

Method

Result

Unit

Requirement/Limit

As per IS:10500:2012

Acceptable Permissible

Remark: *Analyzed at site

Analysis

Per pro SGS India Private Lt

Who you all a pool of

Asish Chakraborty Laboratory Manager **Authorized Signatory**

****End of Report****

Page 3 of 3

WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the client or distriction. The Findings constitute no warranty of the sample(s) representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions if any transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the

Onless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 supercival of the Company

SGS India Private Limited, CS Plot -512(p) Mouza, Hanspukuria, Diamond Harbour Road PO Joka, South 24 Parganas Kolkata - 700104 Phone: +91.33 549967308701

Regd & Corp. OH : SGS House, 4B. A.S. Marg. Vikivali (West), Murribus 400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.egs.com



Print Date: 02/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002087.007

JOE No: KG13-002087

Report Control No : KGR0000013912

Client Name

Sample Described by Customer as :

SPRING WATER

Client Address

: Hindalco Industries Limited(Mines Division) ; Lohardaga,

Postal Code

: 835203

State

: Jharkhand

Country

: India

Sample Type

: SPRING WATER

: 18/03/2013

Received

Registered

: 18/03/2013 : Location: Pakhar Domurpath

Marks on Sample

: 5.5L app

Quantity Sample Collected

; 10.03.2013, time : 1.30 pm

Test Start/End Date : 18/03/2013 - 01/04/2013

Analysis	Method Resul	Result	Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissible
Colour	IS:3025 (Part-4):1983 (Reaff.2006)	5.0	Hz	5	15
Odour	IS:3025 (Part-5):1983 (Reaff.2006)	Agreeable		Agreeable	Agreeable
Taste	IS:3025 (Part-8):1983 (Reaff.2006)	Agreeable		Agreeable	Agreeable
рН	IS:3025 (Part-11):1983 (Reaff:2006)	7.30*		6.5	8 5
Total Hardness (as CaCO3)	IS 3025 (Part-21):1983 (Reaff.2006)	1.52	mg/L	200	500
Iron (as Fe)	IS:3025 (Part-2)	< 0.05	mg/L	0.3	No relaxation
Fluoride (as F)	IS:3025 (Part-60):2008	< 0.10	mg/L	1.0	1.5
Residual Free Chlorine	IS:3025 (Part-26),1986 (Reaff.2003)	< 0.10	mg/L	0.2	1.0
Chloride (as CI)	IS:3025 (Part-32):1988 (Reaff.1999)	<5.00	mg/L	250	1600
Total Dissolved Soilds	IS:3025 (Part-16:1984 (Reaff.1996)	9 60	mg/L	500	2000
E.coli	IS:1622:1981(Reaff.2003)	Absent	per 100ml		Absent/100m

Page 1 of 3

WARNING. The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at five Chent's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at eith forward space conferms, and conditions him. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any notice of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any the Company's sole responsibility is to its Client and this document does not experite to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written This Sound was placed the Legalia and the samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior visits of the Company

SGS India Private Legalia CS Plot -512(p). Mouza, Hanspukuria, Diamond Harbour Road PO-Joka. South 24 Parganas. Kolikata - 700:104 Phone - +91:33 64996700670

SGS India Pvt. Ltd.

Regd & Corp. OH : SGS House: 48. A.S. Marg. Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com



Print Date: 02/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002087.007

JOE No: KG13-002087

Analysis	Report Control No Method	: KGR0000013912 Result	Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissible
Magnesium (as Mg)	IS:3025 (Part-46):1994 (Reaff.1999)	<1.00	mg/L	30	100
Calcium (as Ca)	IS:3025 (Part-40):1991 (Reaff 2003)	<1.00	mg/L	75	200
Copper (as Cu)	IS:3025 (Part-2)	< 0.01	mg/L	0 05	1.5
Manganese (as Mn)	IS:3025 (Part-2)	<0.01	mg/L	0 1	0.3
Sulphate (as SO4)	IS:3025 (Part-24):1986 (Reaff.1998)	<2.00	mg/L	200	400
Nitrate (as NO3)	IS:3025 (Part-34):1988 (Reaff.1999)	1.13	mg/L	45	No relaxation
Phenolic Compound (as C6H5OH)	IS:3025 (Part-43):1992 (Reaff.2003)	<0.001	mg/L	0 001	0.002
Mercury (as Hg)	IS:3025 (Part-48):1994 (Reaff.1999)	<0.001	mg/L	0.001	No retaxation
Cadmium (as Cd)	IS:3025 (Part-41):1992 (Reaff.2003)	<0.003	mg/L	0.003	No relaxation
Selenium (as Se)	IS 3025 (Part-2)	<0.005	mg/L	0.01	No relexation
Arsenic (as As)	IS:3025 (Part-37) 1988 (Reaff, 1999)	<0.005	mg/L	0 01	No relaxation
Cyanide (as CN)	IS:3025 (Part-27):1986 (Reaff.2003)	<0.020	mg/L	0.05	No relaxation
Lead (as Pb)	IS:3025 (Part-47):1994 (Reaff 1999)	0.018	mg/L	0.01	No relaxation
Zinc (as Zn)	IS 3025 (Part-2)	< 0.01	mg/L	5	16
Anionic Surface Active Agent (as MBAS)	IS:13428:2005: Annex K	<0.05	mg/L	0.2	1 0
Chromium (as Cr)	IS 3025 (Part-2)	<0.01	mg/L	0.05	No relaxation
Mineral Oil	IS:3025 (Part-39):1991 (Reaff.2003)	<0.01	mg/L	0.5	No relaxation
Total Alkalinity (as CaCO3)	IS:3025 (Part-23):1986 (Reaff.2003)	2.76	mg/L	200	600
Aluminium (as Al)	IS:3025 (Part-55):2003	< 0.03	mg/L	0 03	0.2
Boron (as B)	IS:3025 (Part-57):2005	<0.05	mg/L	0.5	10
Turbidity	IS:3025 (Part-10):1984 (Reaff.2006)	0.94	NTU	1	5
Coliform bacteria	IS:1622-1981 (Reaffirmation 2003)	n Present	per 100ml		

Page 2 of 3

WASNING The sample(s) to which the findings recorded herein (the 'Findings') relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with legard to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at ottp://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions. If any trues action documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the following processors.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of penshable items) and 32 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written

SGS India Pvt. Ltd.

SGS India Private Limited CS Plot -512(p) Mouza, Hanspukuria, Diamond Harbour Road PO-Joka, South 24 Parganas Kolkata - 793104 Phone: +91 33 64996700/6703 Regid & Corp. Off : SGS House, 4B, A.S. Marg, Vikhvoli (West), Mumbel-400083, Tel : (022) 25798421 to 28 Fax : (022) 25798421 to 35 www.sqs.com



SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date: 02/04/2013

Report No : KG13-002087.007

JOE No: KG13-002087

Report Control No

: KGR0000013912

Analysis

Method

Result

Unit

Requirement/Limit

As per IS:10500:2012

Acceptable Permissible

Remark: 'Analyzed at site

Per pro SGS India Private L1

Dr of works by

Asish Chakraborty Laboratory Manager **Authorized Signatory**

****End of Report****

Page 3 of 3

WARNING. The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client or the sample(s) to the sample(s) accepts no liaming with regard to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at additional decompositions. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the fieldest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 approval of the Company.

This document cannot be reproduced except in full, without prior written.

SGS India Pvt. Ltd.

y SGS India Private Limited.CS Ptot -512(p), Mouza, Hanspukuria, Diamond Harbour Road, PO-Joka, South 24 Parganas, Kolkata - 700104 Phone +91 33 64996700-G701 Regd & Corp. Off : SGS House, 4B. A.5. Marg, Vikhudi (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sps.com



Print Date: 01/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002092.006

JOE No: KG13-002092

Report Control No

: KGR0000013682

Sample Described by Gustomer as : GROUND WATER

Client Name

: Hindalco Industries Limited(Mines Division)

Client Address Postal Code

: Lohardaga,

: 835203

State

: Jharkhand

Country

: India

Sample Type Received

: GROUND WATER

: 18/03/2013

Registered

: 18/03/2013

Marks on Sample

: Location: Pakhar-Sarnapath

Quantity

; 5.5L app

Sample Collected

; 10.03.2013, time : 12.00 pm

Test Start/End Date : 18/03/2013 - 01/04/2013

Analysis	Method	Result	Unit		ment/Limit 10500:2012
Colour		-		Acceptable	Permissib
	IS:3025 (Part-4):1983 (Reaff.2006)	20.0	Hz	5	1
Odour	IS:3025 (Part-5):1983 (Reaff.2006)	Agreeable		Agreeable	Agregacia
Taste	IS:3025 (Part-8):1983 (Reaff.2006)	Agreeable		Agreeable	Agreeable
pH T	IS:3025 (Part-11):1983 (Reaff,2006)	7.30*		6.5	à t
Total Hardness (as CaCO3)	IS:3025 (Part-21):1983 (Reaff.2006)	9 09	mg/L	200	60
Iron (as Fe)	IS 3025 (Part-2)	0.17	mg/L	0.3	No relaxation
Fluoride (as F) Residual Free Chlorine	IS:3025 (Part-60):2008	0.18	mg/L	1.0	1
	IS:3025 (Part-26):1986 (Reaff.2003)	<0.10	mg/L	0.2	1 (
Chloride (as CI)	IS:3025 (Part-32):1988 (Reaff,1999)	<5.00	mg/L	250	1066
Total Dissolved Soilds	IS:3025 (Part-16 :1984 (Reaff.1996)	19.00	mg/L	500	204.0
E.coli	IS:1622:1981(Reaff 2003)	Absent	per 100ml		Absent/100m
Coliform bacteria	IS:1622-1981 (Reaffirmation 2003)	Absent	per 100ml		
Calcium (as Ca)	IS:3025 (Part-40):1991	2 42	mg/L	75	Absent/100m
Magnesium (as Mg)	(Reaff.2003) IS:3025 (Part-46) :1994 (Reaff.1999)	<1.00	mg/L	30	200

**MARNING. The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no sability related to the origin or source from which the sample(s) is/are said to be extracted.

The uncument is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible of the little www.sgr.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any notice of this deciment is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client and this document does not expected to the transaction from exercising all their rights and obligations under the fullest extent of the law. fullest extent of the law

Uniciss otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 approval of the Company.

SGS India Private Limited CS Plot 512(p) Mouza, Hanspukinia Diamond Harbour Road PO-Joka: South 24 Parganas Kolkata - 700104 Phone - +91-33 6496076665737

SGS India Pvt. Ltd.

SGS India Pvt. Ltd.

Regd & Corp. Qtt. SGS Essuer. 48, A.S. Marg, Vishroli (West). Mumbai-400083. Tel: (022) 25798421 to 28 Fax -(022) 25798431 to 35 www.sqs.acc



Print Date: 01/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002092.006

JOE No: KG13-002092

Analysis	Report Control No Method	: KGR0000013682 Result	Unit	Require As per IS	ment/Limit :10500:2012
Copper (as Cu)	15.2005			Acceptable	Permissibi
Manganese (as Mn)	IS:3025 (Part-2)	0.07	mg/L	0.05	
	IS:3025 (Part-2)	0.08	mg/L	0.1	1.5
Sulphate (as SO4)	IS:3025 (Part-24):1988	<2.00			0.3
Nitrate (as NO3)	(Reaff, 1998)	~2.00	mg/L	200	400
The second secon	IS:3025 (Part-34):1988 (Reaff.1999)	2.25	mg/L	45	Nevel
Phenolic Compound (as C6H5OH)	IS:3025 (Part-43):1992	40.004	-		No relaxation
Mercury (as Hg)	(Reaff.2003)	<0.001	mg/L	0.001	0.002
	IS:3025 (Part-48):1994 (Reaff.1999)	< 0.001	mg/L	0.001	
Cadmium (as Cd)	IS:3025 (Part-41):1992			0.001	No relaxation
Selenium (as Se)	(Reaff.2003)	<0.003	mg/L	0.003	No relaxation
	IS:3025 (Part-2)	< 0.005	mg/L		
Arsenic (as As)	IS:3025 (Pert-37):1988	.74.57.50E	HALL	0.01	No relaxation
Cyanide (as CN)	(Kean, 1999)	<0.005	mg/L	0.01	No relaxation
	IS:3025 (Part-27):1986 (Reaff.2003)	<0.020	mg/L	0.05	
Lead (as Pb)	IS:3025 (Part-47):1994			0.05	No relaxation
Zinc (as Zn)	(Reaff.1999)	0.021	mg/L	0.01	No relaxation
	IS:3025 (Part-2)	0.82	mg/L	5	
Anionic Surface Active Agent (as MBAS)	IS:13428:2005: Annex K	<0.05		5	15
Chromium (as Cr)	2	<0.05	mg/L	0.2	1 0
ALL DE CAT - 1811	IS:3025 (Part-2)	< 0.01			
Mineral Oil	IS:3025 (Part-39):1991		mg/L	0.05	No relaxermn
Total Alkalinity (as CaCO3)	(Reaff.2003)	<0.01	mg/L	0.5	No relaxation
	IS:3025 (Part-23) :1986 (Reaff.2003)	12.13	mg/L	200	
Aluminium (as Al)	IS:3025 (Part-55):2003	1.5	mg/c	200	600
Boron (as B)		- <0.03	mg/L	0.03	0.2
Turbidity	IS:3025 (Part-57):2005	0.09	mg/L	0.5	
dividity	IS:3025 (Part-10):1984	1.82		500	1.0
	(Reaff.2006)	1.52	NTU	1	5

WARNING The sample(s) to which the findings recorded herein (the "Findings") relate was(wers) drawn and f or provided by the Client or by a third party acting of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no Hability with regard to the origin or source from which the sample(s) stare said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at observing and conditions. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client and this document does not expressed on documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written SGS India Pvt. Ltd.

SGS India Pvt. Ltd.

SGS India Pvt. Ltd.

SGS House. 48, A.S. Marg. Vikhvoli (Westf, Mombai-40083, Tel.: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com



Report No : KG13-002092.006

Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date: 01/04/2013

JOE No: KG13-002092

Report Control No

: KGR0000013682

Per pro SGS India Private Lt

Av of about of

Asish Chakraborty **Laboratory Manager** Authorized Signatory

""End of Report"

Page 3 of 3

WARRING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no habitity regard to the origin or source from which the sample(s) is/are said to be extracted.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at introduced interpretation of the content of the

Unidess otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 approval of the Company

SGS India Private Limited CS Piot 512(p) Mouza, Hanspukuria Diamond Harbour Road PO-Joka, South 24 Parganas Kolkata - 200104 Phone: +81.33 d48967088705

Regd & Corp. Off SGS House, 48, A.S. Marg, Vikhroli (West), Mumbai-400083, Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 (www.sqp.com



Report No.: CA:GL:3120015187

DATE: 17/10/2012

JOE No.: 1212806597

Report Control No.:3125016169

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED SAMPLE IDENTIFIED AS : AMBIENT AIR QUALITY MONITORING

CUSTOMER NAME

HINDALCO INDUSTRIES LIMITED (MINES DIVISION)

ADDRESS

LOHARDAGA, JHARKHAND

CITY

835302

COUNTRY

INDIA

N.A.

SAMPLING METHOD SAMPLE DESCRIPTION

AMBIENT AIR QUALITY MONITORING

MARK/LOCATION

SITE:PAKHAR(8.09)/PAKHAR(15.58)/PAKHAR(115.13)/PAKHAR(109.507) BAUXITE

MINES(PAKHAR PLATEAU)

LOCATION MINE LEASE AREA(COREZONE)

DATE:23.09.12 TO 24.09.12

SAMPLE RECD ON

11/10/2012

TEST START DATE TEST END DATE

11/10/2012 17/10/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT As per CPCB RESIDENTIAL AREA MIN MAX
CARBON MONOXIDE (CO)	USEPA CHAPTER-2	<0.1 ppm	1.7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	7.8 µg/m3	80 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	81.3 µg/m3	100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	39.3 µg/m3	60 µg/m3
SULPHUR DIOXIDE (SO2)	IS 5182:PART 2:2001	<4.0 µg/m3	80 µg/m3

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

per pro SGS India Private Ltd.

J. A. Duffa Asish Chakraborty Manager Laboratory

Page 1 of 1

A. R. Dutte

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at high //www.sps.com/arms_and_conditions.htm. Attention is drawn to the limitation of its billiptication and jurisdiction issues defined therein. Any holder of this document is divised that information contained between reflects the Company's shallings at the time of its intervention only and within the limits of Chert's instructions, if any. The Company's solid responsibility is to its Chert and this document document is attributed in the solid property of the Company's solid responsibility of the Company's solid responsibility of the Company's property of the Company's proper

SGS India Pvt. Ltd. | Laboratory, CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Road, PO-Joka, South 24 Parganas, Kelkata-700104 Phone: +91: 33 64996701/ 64996700.

Regd & Corp. Oil. SGS House, 4B, A.S. Maq. Vikholi (West). Mumbai 40083. Tet. (622) 25798421 to 28 Fax. (622) 25798431 to 35 www.sps.com.



Report No. : CA:GL:3120015188

DATE: 17/10/2012

JOE No.: 1212806597

Report Control No.:3125016170

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED SAMPLE IDENTIFIED AS : AMBIENT AIR QUALITY MONITORING

CUSTOMER NAME

HINDALCO INDUSTRIES LIMITED (MINES DIVISION)

ADDRESS

LOHARDAGA, JHARKHAND

CITY

835302

COUNTRY

INDIA

SAMPLING METHOD

NA

SAMPLE DESCRIPTION

AMBIENT AIR QUALITY MONITORING

MARK/LOCATION

SITE:PAKHAR(8.09)/PAKHAR(15.58)/PAKHAR(115.13)/PAKHAR(109.507) BAUXITE

MINES(PAKHAR PLATEAU)

LOCATION: KEKRANG VILLAGE (BUFFER ZONE) DATE:23.09.12 TO 24.09.12

SAMPLE RECD ON

11/10/2012

TEST START DATE **TEST END DATE**

11/10/2012 17/10/2012

TESTS	PROTOCOL	RESULT	REQUIREME As per (RESIDENTI MIN	СРСВ
CARBON MONOXIDE (CO)	USEPA CHAPTER-2	<0.1 ppm	1.	7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	6.6 µg/m3	8	30 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	69.9 µg/m3	1	00 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	32.1 µg/m3	6	60 µg/m3
SULPHUR DIOXIDE (SO2)	IS 5182:PART 2:2001	< 4.0 µg/m3	8	0 μg/m3

**** End of Report ****

per pro SGS India Private Ltd.

J. A. Duffer Asish Chakraborty Manager Laboratory A. E. Dalle

Page 1 of 1

Chemist sum 017

This document is issued by the Company under its General Conditions of Service printed overbal or available on request and accessible at http://www.egs.conditions.ntm. Attention is drawn to the limitation of liability indemnification and jurisdiction issued adefined therein Any holder of this document is advised that information configured therein any holder of this document is advised that information configured therein any holder of this document is advised that there is to its Client and this document does not expense to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, the configured of the configured or the configured of the configured or the configured or the configuration of the configuration of

SGS India Pv1, Ltd. | Laboratory, CS Piot -512(p), Mouza, Hanspukuria, Diamond Harbour Road, PO-Joka, South 24 Parganas, Kolkata-700104 Prione: +91: 33 64996701/ 64996700.

Regd & Corp. Off.: SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel. (022) 25798421 to 28 Fax. (022) 25798431 to 35 www.sqs.com

Member of the SGS Group (SGS SA)



Report No. : CA:GL:3120015189

DATE: 17/10/2012

JOE No.: 1212806597

Report Control No.:3125016171

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

CUSTOMER NAME

SAMPLE IDENTIFIED AS : AMBIENT AIR QUALITY MONITORING HINDALCO INDUSTRIES LIMITED (MINES DIVISION)

ADDRESS

LOHARDAGA, JHARKHAND

CITY

835302

INDIA

COUNTRY

SAMPLING METHOD

NA SAMPLE DESCRIPTION AMBIENT AIR QUALITY MONITORING

MARK/LOCATION

SITE:PAKHAR(8.09)/PAKHAR(15.58)/PAKHAR(115.13)/PAKHAR(109.507) BAUXITE

MINES(PAKHAR PLATEAU)

LOCATION:SEMARDEH VILLAGE(BUFFER ZONE) DATE:24.09.12 TO 25.09.12

SAMPLE RECD ON

11/10/2012

TEST START DATE TEST END DATE

11/10/2012 17/10/2012

TESTS	PROTOCOL	RESULT	As	EMENT/LIMIT per CPCB ENTIAL AREA MAX
CARBON MONOXIDE (CO)	USEPA CHAPTER-2	< 0.1 ppm		1.7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	7.4 µg/m3		80 µg/m3

PARTICULATE MATTER(2.5) USPEA CFR40(50), Appendix L 76.8 µg/m3

SULPHUR DIOXIDE (SO2)

PARTICULATE MATTER(10)

IS 5182:PART 2:2001

IS:5182(PART 23)2006

< 4.0 µg/m3

27.3 µg/m3

"" End of Report ""

100 µg/m3

60 µg/m3

80 µg/m3

per pro SGS India Private Ltd.

Asish Chakraborty Manager Laboratory

Page 1 of 1

a. Date Company data by

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible of http://www.sgs.comberns_and_conditions.htm. Attention is drawn to the limitation of liability indemnification issues defined therein. Any helder of this document is cavised that information contained herein reflects the Company's kindings at the time of its intervention only and within the limits of Chent's instructions, if any The Company's sole responsibility is to its Chent and this document doce not exceed to parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgety or fabrification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fulliast section of the content or appearance of this document is unlawful and offenders may be prosecuted to the fulliast section of the fulliast section of the fulliast section of the case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be improduced except in full, without prior written approval of the

SGS India Pyt. Ltd. | Laboratory, CS Piot -512(p), Mouza, Hanspukuria, Diamond Harbour Road, PO-Joka, South 24 Parganas, Kolkata-700104 Phone: +91: 33 64996701/64996700.

Regd & Corp. Off. SGS House, 4B, A.S. Marg, Vikhiroli (West), Mumbai-400083. Tel. (022) 25798421 to 28 Fax. (022) 25798431 to 35 www.sgs.com



Report No. : CA:GL:3120015190

DATE: 17/10/2012

JOE No.: 1212806597

Report Control No.:3125016172

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED SAMPLE IDENTIFIED AS : AMBIENT AIR QUALITY MONITORING

CUSTOMER NAME

HINDALCO INDUSTRIES LIMITED (MINES DIVISION)

ADDRESS

LOHARDAGA, JHARKHAND

CITY

835302

COUNTRY

INDIA

N.A

SAMPLING METHOD

SAMPLE DESCRIPTION AMBIENT AIR QUALITY MONITORING

MARK/LOCATION

SITE:PAKHAR(8.09)/PAKHAR(15 58)/PAKHAR(115.13)/PAKHAR(109.507) BAUXITE

MINES(PAKHAR PLATEAU)

LOCATION: PATRATOLI VILLAGE (BUFFER ZONE) DATE:24.09.12 TO 25.09.12

SAMPLE RECD ON

11/10/2012

TEST START DATE TEST END DATE

11/10/2012 17/10/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMI As per CPCB RESIDENTIAL AREA MIN MAX	
CARBON MONOXIDE (CO)	USEPA CHAPTER-2	< 0.1 ppm	1.7ppm(8h)	
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	6.3 µg/m3	80 µg/m3	
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	94.8 µg/m3	100 μg/m3	
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	44.6 µg/m3	60 µg/m3	
SULPHUR DIOXIDE (SO2)	IS 5182:PART 2:2001	< 4.0 µg/m3	80 µg/m3	

"" End of Report ""

per pro SGS India Private Ltd.

J.A. Auta Asish Chakraborty Manager Laboratory

Page 1 of 1

A. K. Dutta Chemist cam Gar

This document is resized by the Company under its General Conditions of Service printed overball or available on request and accessible at http://www.ags.com/arms_and_conditions.htm. Attention is drawn to the limitation of liability indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereion reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility forces or fastification of the content does not exceed the parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days din case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in fait, without prior writein approval of the

SGS India Pvt. Ltd. | Laboratory, CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Road, PO-Joka, South 24 Parganas, Kolkata-700104 Phone: +91: 33 64996701/ 64996700.

Regd & Corp. Off. SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400883. Tel. (022) 25798421 to 28 Fax. (022) 25798431 to 35 www.sgs.com



Report No.: CA:GL:3120011479

JOE No.: 1212805062

Control No. 3125012285

DATE: 10/08/2012

SAMPLE COLLECTED BY SGS

SAMPLE IDENTIFIED AS : SPRING WATER **COMPANY NAME**

HINDALCO INDUSTRIES LIMITED (MINES DIVISION)

ADDRESS

LOHARDAGA, JHARKHAND

CITY

835302

SAMPLING METHOD

APHA 1060B

SAMPLE DESCRIPTION SPRING WATER

IN PLASTIC BOTTLE

SAMPLE CONDITION SAMPLE QTY.

7L APP

**ARKS ON SAMPLE

PAKHAR

JLLECTED ON

01.08.2012, TIME: 11.30 AM

REGISTERED ON TEST START DATE 02/08/2012

TE

۰	·	•	•				•	•	٠.,
	S	T	E	NE	D	AT	E	:	

02/08/201	2
10/08/201	2

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT As per IS 10500:1991(REAFF 1993) Desirable Permissible		
ALKALINITY (as CaCO3)	IS 3025:PART 23 :1986(Reaff.1998)	<5.0 mg/l	200mg/l	600mg/l	
ALUMINIUM (as AI)	IS 3025 : Part 55 : 2003	<0.02 mg/l	0.03mg/l	0.2mg/i	
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/i	
CADMIUM (as Cd)	IS 3025:PART 41 :1992(Reaff,1998)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax.	

Page 1 of 4

Regd & Corp. Off: SGS House, 4B, A. S. Marg, Vikhroli (West), Mumbai-400083 Tel. (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com

Mambar of the SGS Group (SGS SA)



Report No. : CA:GL:3	20011479	
JOE No.: 1212805062		DATE: 10/08/2012
	Control No.:3125012285	

	Control No.:3125012285			
TESTS	PROTOCOL	RESULT	REQUIREMEN <u>As per</u> 10500:1991(1993)	
CALCIUM (as Ca)	IS 2025 DADT		Desirable	Permissible
	IS 3025:PART 40 :1991(Reaff.2003)	<1.0 mg/l	75mg/I	200mg/
CHLORIDE (as CI)	Clause 2 of IS 3025 Part 32:1988(Reaff, 1999)	<2.0 mg/l	250mg/l	1000mg/
CHROMIUM (Cr6+)	IS 3025:PART 52:2003	<0.01 mg/l	0.05	
COLOUR (HAZEN UNITS)	IS 3025:PART 4	5	0.05mg/l	No Relax
COPPER	:1983(Reaff.2002)	·	5.0	25
	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/100m
FLUORIDE	IS:3025(PART 60):2008	<0.10 mg/l	1.0mg/I	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/I	100mg/l
MANGANESE		<0.01 mg/l	0.1mg/I	0.3mg/l
MERCURY (as Hg)	IS 3025:PART 48 :1994(Reaff.1999)BY ICPOES	<0.001 mg/l	0.001mg/l	No Relax.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of fliability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent

of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written oays for an order samples. The samples incrinegulating oxides are to de retained as specified. This document carrier on reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd. | Laboratory. Behala Industrial Complex. Phase II, First Floor, 620, Diamond Harbour Road, Kolkata-700034 Phone : 91-33-64896700,64996701, Fax : 91-33-24470267

Regd & Corp. Off SGS House, 4B, A.S. Marg, Vikhnoli (West), Mumbai-400083, Tel. (022) 25798421 to 28 Fax. (022) 25798431 to 35 www.sgs.com

Wonbor of the SGS Group (SGS SA)



Report No. : CA:GL:312001147	Control No.:3125012285	DATE :	10/08/201	2
TESTS	PROTOCOL	***************************************		
		RESULT	10500:	EMENT/LIMI Der IS 1991(REAFF 1993)
MINERAL OIL	CLAUSE 6 OF IS 3025:PART 39:1991(Reaff, 2003)	BDL(DL-0.01 mg/l)		Permissible 0.03mg/
NITRATE	IS 3025:PART 34 :1988(Reaff 1999)	6.23 mg/l	45mg/l	No Relax
рН	IS 3025:PART 5:1983(Reaff,2002)	Unobjectionable	Unobject,	Unobject
PHENOLIC COMPOUNDS (as C6H5OH)	IS 3025:PART 11:1983(Realf.2002)	72.	6.5-8.5	No Relax
RESIDUAL FREE CHLORINE	43)1992(Reaff 2005)	<0.001 mg/l	0 001mg/l	0.002mg/l
SELENIUM	GEN/SOP/CALLAB-13		0.2mg/l	NA.
SULPHATE	IS 3025:PART 56:2003 (BY ICPOES) CLAUSE 4 OF IS		0.01mg/l	No Relax.
ASTE	3025:PART 24:1986(Reaff, 2003	<2.0 mg/t	200mg/l	400mg/J
otal Coliforms	IS 3025:PART 7 :1984(Reaff.2002)	Agreeable	Agreeable	
OTAL DISSOLVED SOLIDS	IS 1622:1981(Reaff.2003)	10 0 MPN/100ml		10/100 ml
OTAL HARDNESS (as CaCO3)	IS 3025:PART 16:1984(Reaff.2002)	13 mg/l	500mg/l	2000mg/I
JRBIDITY(in NTU)	IS 3025:PART 21 :1983(Reaff.2002)	<1.0 mg/l	300mg/l	600mg/l
()	IS 3025:PART 10	0.33		

IS 3025:PART 10

1984(Reaff.2002)

0.33

Page 3 of 4

http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurasdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention and jurasdiction issues defined therein. Any holder of this document company's sole responsibility is to its Client and this document does not experize parties to a transaction from exercising all the rights and obligations under the transaction from exercising all their rights and obligations under the transaction of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perchable dams) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written. SGS India Pvt. Ltd.

Laboratory, Behala Industrial Complex, Phase It, First Floor, 620, Diamond Hartrour Road, Kolkata-700034 Phone: 91-33-64996705, Fax: 91-33-24470267

Red & Corp. On. SGS House, 4B, A.S. Mare, Viknroli (West), Mumbai-400083. Lcl. (022) 25788421 to 28 Fax. (022) 25788431 to 35 www.has.com.

Repd & Corp. Off. SGS House, 4B, A.S. Marg, Viktiroli (West), Mumbai-400083. Let. (022) 25798421 to 28 Fitx. (022) 25798431 to 35 www.sqs.com

Manipa of the GOS Gerup (GGS 54)

10NTU

5.0NTU



Report No.: CA:GL:312 JOE No.: 1212805062		DATE: 10/08/2012		
1212805062	Control No.:3125012285			
TESTS	PROTOCOL	250111		
		RESULT	REQUIREMENT/LIMIT	
				perIS
			10500:1	1991(REAFF
				1993)
ZINC (as Zn)	IS 2035 D		Desirable	Permissible
***************************************	IS 3025 Part 49:1991(Reaff.2003)	<0.01 mg/l	5mg/l	15mg/i
* Analyzed at site.	BY ICPOES			

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

per pro SGS India Private Ltd.

Dr. Nemai Ghosh Manager Laboratory

A.M. bow Out of the city

Page 4 of 4

Page 4 of 4

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document company's sile responsibility is to its Olient and this document does not experate parties to a transaction from exercising all their rights and obligations under the transaction of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 approval of the Company

SGS India Pvt. Ltd.

Laboratory, Behala Industrial Complex, Phase II, First Floor, 620, Diamond Harbour Road, Kelkata-700034 Phone: 91-33-6499670, 6499670, Fax: 91-33-24470277

Reed & Corn. Off SGS House, 48, A.S. Main, Vikhibil (West), Mumbai-400083, Tel. (2021/25798421 to 28 Eav. (2021/25798421 to 28 Eav. (2021/25798421 to 28 Eav. (2021/25798421 to 28 Eav.)

Laboratory, Behala Industrial Complex, Phase II, First Floor, 620, Diamond Harbour Road, Kelkata-700034 Phone: 91-33-6499670, 649

Regd & Corp. Off SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400063. Tel. (022) 25798421 to 28 Fax: (022) 2579843110 35 www.sgs.com

Member of the SGS Group (SAS SA)



BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2012-13

The composite cost during the year 2012-13 (April to March) for environmental protection & pollution control by Jharkhand Mines division of Hindalco Industries Ltd for implementation the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Pakhar (115,13 Ha), Pakhar (15.58 Ha), Pakhar (109.507 Ha), Pakhar (8.09 Ha), Pakhar (35.12Ha), Serengdag (140.06 Ha), Serengdag (155.81 Ha), Jalim & Sanai (12.14 Ha), Gurdari (584.19 Ha), Amtipani (190.95 Ha), Kujam I (80.97 Ha) Kujam II (157.38 Ha) and Bagru (75.41 Ha), Hisri, Chiro kukud, & Orsa pat.

Description	Budget (in Lakh Rs.)	Actual (in Lakh Rs.)
		FY 2012-2013
Pollution Control & Environment monitoring	7.50	11.32
Reclamation/ Back filing & Rehabilitation	**	46.60
Green belt & Plantation	25.00	88.09
Rural Development	65.00	81.50
	Pollution Control & Environment monitoring Reclamation/ Back filing & Rehabilitation Green belt & Plantation	Pollution Control & Environment 7.50 monitoring Reclamation/ Back filing & ** Rehabilitation Green belt & Plantation 25.00

^{**}part of OB removed cost.

Convener

Environment Management Cell.



Date:20.03.13

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, AGM (Quality & Environment), Convenor.

Members:

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

By order

Bijesh Kumar Jha
VP (Mines)

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