

Ref No: HIL/LHD/VP (M)/MoEF/ 122

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 (8.09 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-11015/135/2006-IA II(M) dated 24th January 2007 Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for Pakhar(8.09 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

Pariod : Oct 12 March 212

Period : Oct'12 – March'13 J-11015/135 /2006-IA.II (M) Dated 24.1.2007

SI	Specific Conditions	Compliance Status				
No	All the conditions stipulated by SPCB in their Complied. NOC shall be effectively implemented.					
2	The environmental clearance is subject to approval of the state land use Department, Government of Jharkhand for diversion of agricultural land for non-agricultural use.	Mining Lease is granted/ renewed by the State Govt. after due consideration and Cabinet approval on recommendation of DC who is the competent authority to give permission for using the agricultural land for non-agricultural purpose.				
3	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.	Shallow depth mining is being done & the ground water table levels much below the working depth. Hence, there will be no intersecting of the ground water table due to mining activities.				
4	The project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operation.	It is being ensured .No natural water course is obstructed during mining.				
5	Top soil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.	Sequential backfilling and reclamation of the mined out area are being practiced during mining operation. Whenever backfilling will be done to the mined out area, Topsoil will be used for backfilling to reclaim and restore the damage area upto the extent possible.				
6	The waste generated shall be concurrently backfilled in the mined out area. There shall be no external OB dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six monthly basis.	Sequential backfilling and reclamation of the mined out area are being exercised during mining operation. Yearly backfill data is being submitted.(enclosed Annexure)				

7	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.	No run-off is generated from mining activities. However to collect & manage rain water during monsoon, part of mined out area is used as settling tank for the runoff. rain water is being used for watering the mine area, roads, green belt development etc.
	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.	
8	Plantation shall be raised in an area of 6.35 ha including a green belt of adequate width by planting the native species around the ML area, roads, reclaimed area etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 1500 plants per ha.	In 2012-13, plantation over approx. 2.5 Ha area (3500 saplings) has been done in Pakhar .Rest to be complied during project period.
9	The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	A plan is drawn on the basis of discussions with Scientists of State unit office of Central Ground Water Board, Ranchi to implement suitable conservation measures to augment ground water resources in the area and is also submitted to the Regional Director, Central Ground Water Board, Patna, for his further suggestions. Recommendation of CGWB shall be implemented to augment the ground water resources of the area. Copy of letter already submitted.
10	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.	Complied

11	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	Water cess is being paid on monthly basis to State Pollution Control Board.
12	Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded.	To keep vehicular emissions in control, company vehicles are periodically checked & repaired. All transporters have been instructed to obtain PUC certificate for their vehicles
13	Drills should either be operated with dust extractors or should be equipped with water injection system.	Wet drilling is being done in the holes intermittently for dust suppression.
14	Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibration and to arrest fly rocks and boulders should be implemented.	Blasting at Mines is done at fixed blasting period of 12.00 Noon to 1.00 PM on working days. Mobile mining activities are stopped during blasting. All the precautionary and mitigative measures to control ground vibration and to arrest generation of fly rocks are being implemented.
15	Consent to operate should be obtained from SPCB prior to start of enhanced production from the mine.	Obtained & copy attached as Annexure
16	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 discharge from Mine; hence ETP has not been installed. The sewage water from domestic uses is being collected through individual septic tanks & soak pits. Sludge is collected to an integrated soak pit.
17	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.	Action plan for conservation of flora and fauna spotted in the study area has been prepared based on discussions with D.F.O of the area for implementation and a copy of the same is submitted to the D.F.O, on receipt of any suggestion to our action plan the same will be intimated to MOEF. A copy of Action plan drawn and of letter for submission to DFO is all ready submitted to regional office.
18	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 dully approved by Indian Bureau of Mines.

GENERAL CONDITIONS

Sl No	Conditions	Compliance Status
1	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forest	Being Complied.
2	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.	Excavation of Over Burden and Bauxite is being done as per the approved calendar plan. Details of excavation, quantum of mineral, OB, etc have been furnished for the financial year 12-13 and copy enclosed.
3	Four ambient air quality-monitoring station should be established in the core zone as well as in the buffer zone for RPM, SPM, SO ₂ , NO _X monitoring. Location of the stations should be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	Monitoring locations have been fixed after due consultation of SPCB and regular monitoring is being carried out. Monitoring Reports is enclosed.
4	Data on ambient air quality (RPM, SPM, SO ₂ , and 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.	Regular monitoring is being carried out. Monitoring Reports is enclosed in Annexure
5	Fugitive dust emission from all the sources should be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points should be provided and properly maintained.	Water tanker have been provided for sprinkling of water on haul roads and are generally being engaged at the places where active mining is in progress to contain fugitive dust. Water spraying at dust prone areas is also being done manually.
6	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operation of HEMM, etc. should be provided with ear plug / muffs.	Noise monitoring is being done at various locations of the work zone area and monitoring report is being submitted at MoEF. Workers engaged in operation of HEMMs, etc have also been provided with PPEs such as ear plug and ear muffs.

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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.	Complied There is no effluent discharge from Mine. Workshop has an Oil Catchment Pit to trap oil and grease.
8	Personnel working in dusty areas should wear protective respiratory devices and they should also provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Complied. Use of Personal Protective Equipment (PPE) by the individuals is being ensured. All the mine workers are being regularly and periodically health checkup for any contraction of diseases due to exposure in dusty and noisy areas. Training on safety, health and environmental aspects of mining is being regularly imparted through VT centre and also through various
		other training programmes conducted by the State Government, recognized agencies, etc
9	A separate environmental management cell with suitable qualified personnel should be set- up under the control of a Senior Executive, who will report directly to the Head of the Organization.	Separate Environmental Management Cell (EMC) has been constituted and is functioning effectively. Copy enclosed as 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. The mine is running since 1976
11	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubneshwar.	Statement of budgetary provision and actual expenses for environmental protection measure is enclosed. It is once again reiterated that the funds so ear marked shall not be diverted for any other purposes other than it is committed at the beginning of the financial year.(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 Complied
13	A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been	Complied

	received while processing the proposal.	
14	State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Center and Collector's office / Tehsildar's Office for 30 days.	Not Applicable.
15	The project authorities should advertise at least in two local newspapers widely circulated, one of which locality concerned, within 7days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubneshwar.	Complied. Copies, of the advertisement made in the local newspapers, have already been submitted to the Regional Office.



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 Name

: Hindalco Industries Limited(Mines Division)

Client Address Postal Code

: Lohardaga,

: 835203

State

: Jharkhand

Country Sample Type

; India

Received

: AMBIENT AIR QUALITY MONITORING : 12/03/2013

Registered

: 12/03/2013

Marks on Sample Sampling Site

: Location : Mine Lease Area, date : 05.03.2013

: 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		nent/Limit as Per
Particulate Matter (PM10)	IS 6100 /D 1221 - 1221			Min	Max
Particulate Matter (PM2.5)	IS:5182 (Part-23):2006	73	ug/m3	(*)	100
	USEPA CFR(40) Appendix-L	36.41	ug/m3		
Oxides of Nitrogen (NOx)	IS:5182 (Part-6):1975	7.00	1.00	-	60
Sulphur Dioxide (SO2)	(Reaff.2004)	7.62	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		

Page 1 of 2

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Print Date

: 18/03/2013

Report No : KG13-001949.001

JOE No : KG13-001949

Report Control No

: KGR0000012045

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

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SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

Report No : KG13-001949.002

JOE No : KG13-001949

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

Client Name Client Address

; Hindalco Industries Limited(Mines Division) : Lohardaga,

Postal Code

: 835203

State

: Jharkhand

Country

: India

Sample Type

: AMBIENT AIR QUALITY MONITORING

Received Registered

: 12/03/2013 : 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(Pakhar(109.507) Bauxit

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

Analysis	Method	Result	Unit		nent/Limit as Pe NAAQS
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	3 7	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	1.8	80
ark : CO Analyzed at site.	By NDIR Spectroscopy.	< 0.10	PPM		00

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Print Date : 18/03/2013

Report No : KG13-001949.002

JOE No : KG13-001949

Report Control No

: KGR0000012045

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

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SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date

: 18/03/2013

Report No : KG13-001949.003

JOE No : KG13-001949

Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING

Report Control No : KGR0000012045

Client Name Client Address

: Hindalco Industries Limited(Mines Division) : Lohardaga,

Postal Code

: 835203

State

: Jharkhand

Country

: India

Sample Type Received

: AMBIENT AIR QUALITY MONITORING : 12/03/2013

Registered

: 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(Pa

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

Analysis	Method	Result	Unit	Requirement/Limit as Pe	
Particulate Matter (PM10)	IS:5182 (Part-23):2006			Min	Max
Particulate Matter (PM2.5)		78	ug/m3	(*)	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	*	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		105.55

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Print Date : 18/03/2013

Report No : KG13-001949.003

JOE No : KG13-001949

Report Control No : KGR0000012045

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

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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

Client Name

Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING

Client Address

: Hindalco Industries Limited(Mines Division) : Lohardaga,

Postal Code

: 835203

State

; Jharkhand

Country

: India

Sample Type

: AMBIENT AIR QUALITY MONITORING

Received Registered : 12/03/2013 : 12/03/2013

Marks on Sample

: Location : Patratoli Village, date : 14.02.2013

Sampling Site

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

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

Analysis	Method	Result	Unit		ent/Limit as Pe
				Min	Max
Particulate Matter (PM10)	IS:5182 (Part-23):2006	54	ug/m3		100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	24.35	ug/m3	•	60
Oxides of Nitrogen (NOx)	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	By NDIR Spectroscopy.	<0.10	PPM		

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SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date

: 18/03/2013

Report No : KG13-001949.004

Control of the Contro

JOE No : KG13-001949

Report Control No : KGR0000012045

Per pro SGS India Private Ltd

Novacoon. Satya Manna

Section Incharge - ENVI **Authorized Signatory**

****End of Report****

Page 2 of 2

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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 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. (1:2 aqueous solution)	F.A.U.N (2007)	30.6	1.00	μs/cm
pH (1:2) Soil Suspention (1:2 aqueous solution)	F.A.U.N (2007)	6	0.50	psich.
Porosity Bulk Density	F.A.U.N (2007)	48.89		%
Phosphorus (as P)	By Bulk Density Apparatus F.A.U.N (2007)	1.17	0.10	gram/m
Texture Clay	F.A.U.N (2007)	Clay loam	20.00	mg/kg
Sand	F.A.U.N (2007) F.A.U.N (2007)	39.3	5.00	%
Silt	F.A.U.N (2007)	33.2 27.5	1.00	%
Available Chloride (as CI)	Soil & Agriculture Organization (U.N-2007)	<20.00	1.00 20.00	% mg/kg
Available Nitrogen	Food & Agriculture Organization (U.N-2007)	358.16	20.00	mg/kg

Page 1 of 2

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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 : K Method	GR0000012696 Result	Limit of	Unit
			Reporting (LOR)	
Available Potassium (as K)	Soil & Water Book By P.K. Gupta	1618.76	1.00	mg/kg
Available Magnesium (as Mg)	Soil & Water Book By P.K. Gupta	2195.32	1.00	mg/kg
Lead (as Pb) Chromium (as Cr)	USEPA 3052	10.36	2.00	mg/kg
Mercury (as Hg)	USEPA 3052 USEPA 3052	54 80	2.00	mg/kg
Total Organic Matter	Black & Walkely Wet Digestion Method	<1.00 0.88	1.00 0.01	mg/kg %

Per pro SGS India Private Ltd

vorma :

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

****End of Report****

Page 2 of 2

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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:

Report Control No

: KGR0000012696

SOIL(COMPOSITE)

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

Marks on Sample

: 12/03/2013

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)	F.A.U.N (2007)	6	0.50	-
Porosity	F.A.U.N (2007)	51.2		
Bulk Density	By Bulk Density Apparatus	1.02		%
Phosphorus (as P)	F.A.U.N (2007)	<20.000	0.10	gram/m
Texture	F.A.U.N (2007)	Clay loam	20.00	mg/kg
Clay	F.A.U.N (2007)		(#4) (2.0.1416)	
Sand	F.A.U.N (2007)	29 3	5.00	%
Silt	CONTRACTOR OF THE CONTRACTOR O	43.2	1.00	%
	F.A.U.N (2007)	27.5	1.00	%
Available Chloride (as CI)	Soil & Agriculture Organization (U.N-2007)	<20.00	20.00	mg/kg
Available Nitrogen	Food & Agriculture Organization (U.N-2007)	302.31	20.00	mg/kg

Page 1 of 2

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SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date

: 22/03/2013

Report No : KG13-001953.002

JOE No : KG13-001953

	Report Control No : KG	R0000012696		September 19 Marie 19 Page 19
Analysis	Method	Result	Limit of Reporting (LOR)	Unit
Available Potassium (as K)	Soil & Water Book By P.K. Gupta	2522.06	1.00	mg/kg
Available Magnesium (as Mg)	Soil & Water Book By P.K. Gupta	3216.67	1.00	mg/kg
Lead (as Pb)	USEPA 3052	16.23	2.00	mg/kg
Chromium (as Cr)	USEPA 3052	48.84	2.00	mg/kg
Mercury (as Hg)	USEPA 3052	<1.00	1.00	mg/kg
Total Organic Matter	Black & Walkely Wet Digestion Method	0.63	0.01	%

Per pro SGS India Private Ltd

Satya Manna

normo:

Section Incharge - ENVI **Authorized Signatory**

****End of Report****

5

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.

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Print Date: 02/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

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 Received

: SPRING WATER

Registered

: 18/03/2013 : 18/03/2013

Marks on Sample

: Location: Pakhar Bangla Path

Quantity

: 5.5L app

Sample Collected

: 10.03.2013, time : 10.30 am

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

Analysis	Method	Result Unit Requirement/L As per IS:10500::		As per IS:1 Acceptable 5 Agreeable 6.5 200 0.3 1.0 0.2 250	
				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)	7.10*		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	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 03	mg/L	250	1000
Total Dissolved Soilds	IS.3025 (Part-16:1984 (Reaff,1996)	12.60	mg/L	500	2000
E.coli	IS:1622:1981(Reaff.2003)	Absent	per 100ml		Absent/100m

Page 1 of 3

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Print Date: 02/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

1.

Report No : KG13-002087.004

JOE No: KG13-002087

	Report Control No	: KGR0000013912			
Analysis	Method	Result	Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissib
Magnesium (as Mg)	IS:3025 (Part-46):1994 (Reaff.1999)	<1.00	mg/L	30	10
Calcium (as Ca)	IS:3025 (Part-40):1991 (Reaff 2003)	1.21	mg/L	75	20
Copper (as Cu)	IS:3025 (Part-2)	<0.01	mg/L	0.05	15
Manganese (as Mn)	IS 3025 (Part-2)	0.02	mg/L	0.1	0
Sulphate (as SO4)	IS:3025 (Part-24):1986 (Reaff.1998)	<2.00	mg/L	200	40
Nitrate (as NO3)	IS:3025 (Part-34):1988 (Reaff.1999)	1.80	mg/L	45	No relaxatio
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 relaxatio
Cadmium (as Cd)	IS:3025 (Part-41):1992 (Reaff.2003)	<0.003	mg/L	0.003	No relaxatio
Scienium (as Se)	IS:3025 (Part-2)	< 0.005	mg/L	0.01	No relaxatio
Arsenic (as As)	IS 3025 (Part-37) 1988 (Reaff 1999)	<0.005	mg/L	0.01	No relaxallo
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	1
Anionic Surface Active Agent (as MBAS)	IS:13428:2005: Annex K	<0.05	mg/L	0.2	1 (
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	1.0
Turbidity	IS:3025 (Part-10):1984 (Reaff.2006)	2.26	NTU	1	
Coliform bacteria	IS:1622-1981 (Reaffirmatio 2003)	n Present	per 100ml		

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Solve India Private Limited CS Plot -512(p) Mouza. Hanspukuria, Diamond Harbour Road PO-Joka, South 24 Parganas Kolkata - 700104 Phone -91 33/14998706/6701



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

Method

Result

Unit

Requirement/Limit As per IS:10500:2012

Acceptable Permissible

Remark: *Analyzed at site.

Analysis

Per pro SGS India Private Lt

Av drahadil

Asish Chakraborty **Laboratory Manager Authorized Signatory**

****End of Report****

Page 3 of 3

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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

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 Sarnapath

Quantity

: 5.5L app

Sample Collected

: 10.03.2013, time : 11.00 am

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

Analysis	Method	Result	Unit		rement/Limit S:10500:2012	
					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)	7.10*		6.5	8.5	
Total Hardness (as CaCO3)	IS:3025 (Part-21):1983 (Reaff 2006)	5.05	mg/L	200	600	
Iron (as Fe)	IS 3025 (Part-2)	0.09	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)	5.75	mg/L	250	1000	
Total Dissolved Soilds	IS:3025 (Part-16:1984 (Reaff.1996)	15.60	mg/L	500	2000	
E.coli	IS:1622:1981(Reaff.2003)	Absent	per 100ml		Absent/100m	

Page 1 of 3

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SGS India Pvt. Ltd.

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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	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)	1.62	mg/L	75	200
Copper (as Cu)	IS:3025 (Part-2)	<0.01	mg/L	0.05	1
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	40
Nitrate (as NO3)	IS:3025 (Part-34):1988 (Reaff.1999)	2.80	mg/L	45	No relaxatio
Phenolic Compound (as C6H5OH)	IS:3025 (Part-43):1992 (Reaff:2003)	<0.001	mg/L	0.001	0.69
Mercury (as Hg)	IS:3025 (Part-48):1994 (Reaff.1999)	<0.001	mg/L	0.001	No relaxatio
Cadmium (as Cd)	IS:3025 (Part-41):1992 (Reaff 2003)	<0.003	mg/L	0 003	No relaxatio
Selenium (as Se)	IS:3025 (Part-2)	< 0.005	mg/L	0.01	No relaxatio
Arsenic (as As)	IS:3025 (Part-37):1988 (Reaff 1999)	<0.005	mg/L	0.01	No relaxatio
Cyanide (as CN)	IS:3025 (Part-27):1986 (Reaff.2003)	<0.020	mg/L	0.05	No relaxatio
Lead (as Pb)	IS:3025 (Part-47):1994 (Reaff 1999)	0.021	mg/L	0.01	No relaxatio
Zinc (as Zn)	IS:3025 (Part-2)	0.01	mg/L	5	1
Anionic Surface Active Agent (as MBAS)	IS:13428:2005: Annex K	<0.05	mg/L	0.2	*
Chromium (as Cr)	IS:3025 (Part-2)	< 0.01	mg/L	0.05	No relaxatio
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	60
Aluminium (as Al)	IS:3025 (Part-55):2003	0.04	mg/L	0.03	i)
Boron (as B)	IS:3025 (Part-57):2005	<0.05	mg/L	0.5	1
Turbidity	IS:3025 (Part-10):1984 (Reaff,2006)	3.35	NTU	1	
Coliform bacteria	IS:1622-1981 (Reaffirmation 2003)	on Present	per 100ml		

Page 2 of 3

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Print Date: 02/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Analysis

Report No: KG13-002087.005

JOE No: KG13-002087

Report Control No

Method

: KGR0000013912

Result

Unit

Requirement/Limit

As per IS:10500:2012

Acceptable Permissible

Remark: *Analyzed at site.

Per pro SGS India Private Lt

Whateshop A

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 accepts 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 liaming. with regard to the origin or source from which the sample(s) is/are said to be extracted.

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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 Sample Type

: India : SPRING WATER

: 18/03/2013

Received

: 18/03/2013

Registered

: Location: Pakhar

Marks on Sample

: 5.5L app

Quantity Sample Collected

; 10.03.2013, time ; 12.00 pm

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

Analysis	Method	Result	Unit	As per IS:	ement/Limit ::10500:2012	
· · · · · · · · · · · · · · · · · · ·	V			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

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Print Date: 02/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002087.006

JOE No: KG13-002087

Analysis	Report Control No	: KGR0000013912			
routysia	Method	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)	0.02	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	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)	4.96	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	1.0
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

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Print Date: 02/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No: KG13-002087.006

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

Av de alleaders A

Asish Chakraborty Laboratory Manager **Authorized Signatory**

....End of Report....

Page 3 of 3

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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

Sample Described by Customer as : SPRING WATER

Client Name Client Address : Hindalco Industries Limited(Mines Division) ; Lohardaga,

Postal Code

: 835203

State

: Jharkhand

Country

: India

Sample Type Received

: SPRING WATER

: 18/03/2013 : 18/03/2013

Registered Marks on Sample

: Location: Pakhar Domurpath

Quantity

: 5.5L app

Sample Collected

; 10.03.2013, time : 1.30 pm

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

Analysis	Analysis	Method	Result	Unit	2 2 2 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2	nent/Limit 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	
H	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	600	
ron (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	160°C	
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

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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			
Analysis	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	1.3
Manganese (as Mn)	IS:3025 (Part-2)	< 0.01	mg/L	0 1	o c
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	0.000
Mercury (as Hg)	IS:3025 (Part-48):1994 (Reaff.1999)	<0.001	mg/L	0.001	No relaxatio
Cadmium (as Cd)	IS:3025 (Part-41):1992 (Reaff.2003)	<0.003	mg/L	0.003	No relaxatio
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 relaxatio
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	1
Anionic Surface Active Agent (as MBAS)	IS:13428.2005: Annex K	<0.05	mg/L	0 2	1
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 relaxatio
Total Alkalinity (as CaCO3)	IS:3025 (Part-23):1986 (Reaff.2003)	2.76	mg/L	200	60
Aluminium (as Al)	IS:3025 (Part-55):2003	<0.03	mg/L	0 03	0
Boron (as B)	IS:3025 (Part-57):2005	<0.05	mg/L	0 5	1
Turbidity	IS:3025 (Part-10):1984 (Reaff.2006)	0.94	NTU	1	
Coliform bacteria	IS:1622-1981 (Reaffirmati 2003)	on Present	per 100ml		

Page 2 of 3

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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

Analysis

Method

Result

Unit

Requirement/Limit As per IS:10500:2012

Acceptable Permissible

Remark: 'Analyzed at site.

Per pro SGS India Private Lt

Dr. cy mayory

Asish Chakraborty Laboratory Manager **Authorized Signatory**

****End of Report****

Page 3 of 3

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Print Date: 01/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

: KGR0000013682

JOE No: KG13-002092

Report No : KG13-002092.006

Report Control No

Sample Described by Customer as : GROUND WATER

Client Name

: Hindalco Industries Limited(Mines Division)

Client Address Postal Code

: Lohardaga,

: 835203

: Jharkhand

Country

: India

Sample Type

: GROUND WATER

Received

: 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
			***************************************	Acceptable	Permissible
Colour	IS:3025 (Part-4):1983 (Reaff,2006)	20.0	Hz	5	11
Odour	IS:3025 (Part-5):1983 (Reaff.2006)	Agreeable		Agreeable	Agrecan4
Taste	IS:3025 (Part-8):1983 (Reaff.2006)	Agreeable		Agreeable	Agreeable
pH	IS:3025 (Part-11):1983 (Reaff.2006)	7.30*		6.5	6.5
Total Hardness (as CaCO3)	IS:3025 (Part-21):1983 (Reaff.2006)	9.09	mg/L	200	600
Iron (as Fe)	IS 3025 (Part-2)	0.17	mg/L	0.3	No relaxation
Fluoride (as F)	IS:3025 (Part-60):2008	0.18	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)	19.00	mg/L	500	2000
E.coli	IS 1622:1981(Reaff 2003)	Absent	per 100ml		Absent/100m
Coliform bacteria	IS:1622-1981 (Reaffirmation 2003)	Absent	per 100ml		Absent/100m
Calcium (as Ca)	IS:3025 (Part-40):1991	2 42	mg/L	75	
Magnesium (as Mg)	(Reaff.2003) IS:3025 (Part-46):1994 (Reaff.1999)	<1.00	mg/L	30	200

Page 1 of 3

**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 cells 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 vanisty cannot be extracted.

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Print Date: 01/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002092.006

JOE No: KG13-002092

	D				JOE No : KO	313-002092
Analysis	Report Control No : K		: KGR0000013682 Result	Unit	Requirement/Limit As per IS:10500:2012	
					Acceptable	Permissibi
Copper (as Cu)	IS:3025 (Pai	1-2)	0.07	mg/L	0.05	1 :
Manganese (as Mn)	IS:3025 (Par	1-2)	0.08	mg/L	0.1	
Sulphate (as SO4)	IS:3025 (Par (Reaff,1998)	t-24):1986	<2.00	mg/L	200	0 : 400
Nitrate (as NO3)	(S:3025 (Par (Reaff.1999)		2.25	mg/L	45	No relaxation
Phenolic Compound (as C6H5OH) Mercury (as Hg)	IS:3025 (Par (Reaff.2003)	(9)	<0.001	mg/L	0.001	0 002
Cadmium (as Cd)	IS:3025 (Par (Reaff.1999)		<0.001	mg/L	0.001	No relaxation
Selenium (as Se)	IS:3025 (Part (Reaff.2003) IS:3025 (Part	100000	<0.003	mg/L	0.003	No relaxation
Arsenic (as As)			<0.005	mg/L	0.01	No relaxation
Cyanide (as CN)	IS:3025 (Part (Reaff,1999) IS:3025 (Part		<0.005	mg/L	0.01	No relaxation
Lead (as Pb)	(Reaff.2003) IS:3025 (Part		<0.020	mg/L	0.05	No relaxation
Zinc (as Zn)	(Reaff.1999) IS:3025 (Part		0.021	mg/L	0.01	No relaxation
Anionic Surface Active Agent (as MBAS)	IS:13428:200		<0.05	mg/L mg/L	5	15
Chromium (as Cr)	IS:3025 (Part-	2)	<0.01	mg/L	0.05	No relaxetion
Mineral OII	IS:3025 (Part- (Reaff.2003)		<0.01	mg/L		No relaxation
Total Alkalinity (as CaCO3) Aluminium (as AI)	IS:3025 (Part- (Reaff.2003)		12.13	mg/L	200	600
	IS:3025 (Part-	2	· <0.03	mg/L	0.03	0.2
Boron (as B) Turbidity	15:3025 (Part-		0.09	mg/L	0.5	1.0
· dividity	IS:3025 (Part- (Reaff.2006)	10):1984	1.82	NTU	1	5

Page 2 of 3

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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

Per pro SGS India Private Lt

Way of March &

Asish Chakraborty Laboratory Manager **Authorized Signatory**

****End of Report****

Page 3 of 3

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Report No. : CA:GL:3120015187

DATE: 17/10/2012

JOE No.: 1212806597

Report Control No.:3125016169

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

CUSTOMER NAME

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

LOHARDAGA, JHARKHAND

ADDRESS

835302

CITY

INDIA

COUNTRY

SAMPLING METHOD SAMPLE DESCRIPTION

N.A. 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

11/10/2012 17/10/2012

TESTS	TESTS PROTOCOL F		REQUIREMENT/LIMI As per CPCB RESIDENTIAL ARE			
		White particular is a second control of the second of the	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.

Asish Chakraborty Manager Laboratory

Page 1 of 1

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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) LOHARDAGA, JHARKHAND

ADDRESS

835302

CITY 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: KEKRANG VILLAGE (BUFFER ZONE)

DATE:23.09.12 TO 24.09.12

SAMPLE RECD ON

11/10/2012

TEST START DATE

11/10/2012 17/10/2012

TESTS

TEST END DATE

PROTOCOL	PROTOCOL	RESULT	REQUIRE	MENT/LIMIT
		As p	er CPCB	
			RESIDE	ITIAL AREA
			MIN	MAX

			RESIDE MIN	ENTIAL AREA MAX
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		80 μg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	69.9 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	32.1 µg/m3		60 µg/m3
SULPHUR DIOXIDE (SO2)	IS 5182:PART 2:2001	< 4.0 µg/m3		80 µg/m3

"" End of Report

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Page 1 of 1

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Report No.: CA:GL:3120015189

DATE: 17/10/2012

JOE No.: 1212806597

Report Control No.:3125016171

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

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

CUSTOMER NAME

LOHARDAGA, JHARKHAND

ADDRESS

CITY

835302

COUNTRY

INDIA NA

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:SEMARDEH VILLAGE(BUFFER ZONE)

DATE:24.09.12 TO 25.09.12

SAMPLE RECD ON

11/10/2012 11/10/2012

TEST START DATE

TESTS 17/10/2012	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	7.4 µg/m3	80 µg/m3			
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	76.8 µg/m3	100 µg/m3			
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	27.3 µg/m3	60 µg/m3			
SULPHUR DIOXIDE (SO2)	IS 5182:PART 2:2001	< 4.0 µg/m3	80 µg/m3			

"" End of Report ""

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Asish Chakraborty Manager Laboratory

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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

COUNTRY

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 11/10/2012

TEST START DATE

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	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.

Asish Chakraborty Manager Laboratory

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Report No. : CA:GL:3120011479

DATE: 10/08/2012

JOE No.: 1212805062

Control No.:3125012285

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

02/08/2012

TEST START DATE

02/08/2012

TEST END DATE

10/08/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIM As per IS 10500:1991(REAF 1993) Desirable Permissib			
ALKALINITY (as CaCO3)	IS 3025:PART 23 :1986(Reaff,1998)	<5.0 mg/l	200mg/l	600mg/l		
ALUMINIUM (as Al)	IS 3025 : Part 55 : 2003	<0.02 mg/l	0.03mg/l	0.2mg/l		
ANIONIC DETERGENTS (as MBAS)	ANNEX. K of IS 13428: <0.05 mg/l 2005	8: <0.05 mg/l 0.2mg/l	0.2mg/l	0.2mg/l	ng/l 0.2mg/l	1mg/l
ARSENIC (as As)	IS 3025:PART 37:1988(Reaff.1999)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax		
BORON	Annex.H OF IS:13428:2005	<0.05 mg/l	1.0mg/l	5.0mg/l		
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

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Report No. : CA:GL:3	120011479	DATE: 10/08/2012
JOE No. : 1212805062	Control No.:3125012285	

	Control No.:3120012265							
TESTS	TESTS PROTOCOL R							
CALCIUM (as Ca)	IS 3025:PART 40 :1991(Reaff.2003)	<1.0 mg/l	75mg/l	200mg/l				
CHLORIDE (as CI)	Clause 2 of IS 3025 Part 32:1988(Reaff, 1999)	<2.0 mg/l	250mg/l	1000mg/l				
CHROMIUM (Cr6+)	IS 3025:PART 52:2003	<0.01 mg/l	0.05mg/l	No Relax.				
COLOUR (HAZEN UNITS)	IS 3025:PART 4 :1983(Reaff.2002)	5	5.0	25				
COPPER	IS 3025: PART 42:1992(Reaff, 2003) BY ICPOES	<0.01 mg/l	0.05mg/l	1.5mg/l				
CYANIDE (as CN)	IS 3025:PART 27 :1986(Reaff.1998)	<0.02 mg/l	0.05mg/l	No Relax.				
E.coli	IS 1622:1981(Reaff.2003)	Absent/100ml		ABS/100m				
FLUORIDE	IS:3025(PART 60):2008	<0.10 mg/l	1.0mg/l	1.5mg/l				
IRON (as Fe)	IS 3025:PART 53:2003 (BY ICPOES)	<0.05 mg/i	0.3mg/l	1 mg/l				
LEAD (as Pb)	IS 3025:PART 47:1994(Reaff.2003) BY ICPOES	47:1994(Reaff.2003)		No Relax.				
MAGNESIUM (as Mg)	IS 3025:PART 46 :1994(Reaff.1999)			100mg/l				
MANGANESE	IS:3025(PART 59) 2006	IS:3025(PART 59) <0.01 mg/l 0.1mg/l						
MERCURY (as Hg)	IS 3025:PART 48 :1994(Reaff,1999)BY ICPOES	<0.001 mg/l	0.001mg/l	No Relax.				

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Unless otherwise stated the results shown in this test report refer only to the sample(s) lasted 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 of the Company.

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Manbar of the SGS Group (SGS SA)



Report No. : CA:GL:3120011479		DATE: 10/08/2012
JOE No. : 1212805062	Control No.:3125012285	

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT				
			10500:1	per IS 991(REAFF 993) Permissible			
MINERAL OIL	CLAUSE 6 OF IS 3025:PART 39:1991(Reaff: 2003)	BDL(DL-0.01 mg/l)	0.01mg/l	0 03mg/l			
NITRATE	IS 3025:PART 34 :1988(Reaff 1999)	6.23 mg/l	45mg/I	No Relax			
ODOUR	IS 3025:PART 5:1983(Reaff,2002)	Unobjectionable	Unobject.	Unobject			
рН	IS 3025:PART 11:1983(Reaff,2002)	72.	6.5-8.5	No Relax			
PHENOLIC COMPOUNDS (as C6H5OH)	IS 3025(Part 43)1992(Reaff 2005)	<0.001 mg/l	0 001mg/i	0.002mg/			
RESIDUAL FREE CHLORINE	GEN/SOP/CALLAB-13	<0.10 mg/l *	0.2mg/l				
SELENIUM	IS 3025 PART 56:2003 (BY ICPOES)	<0.005 mg/l	0.01mg/I	No Relax.			
SULPHATE	CLAUSE 4 OF IS 3025:PART 24:1986(Reaff, 2003	<2.0 mg/t	200mg/l	400mg/l			
TASTE	IS 3025:PART 7 :1984(Reaff.2002)	Agreeable	Agreeable	φ.			
Total Coliforms	IS 1622:1981(Reaff.2003)	10.0MPN/100ml		10/100 ml			
TOTAL DISSOLVED SOLIDS	IS 3025:PART 16:1984(Reaff,2002)	13 mg/l	500mg/l	2000mg/l			
TOTAL HARDNESS (as CaCO3)	IS 3025:PART 21 :1983(Reaff.2002)	<1.0 mg/l	300mg/l	600mg/l			
TURBIDITY(in NTU)	IS 3025:PART 10 :1984(Reaff,2002)	0.33	5.0NTU	10NTU			

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ory, Bahala Industrial Complex, Phase II, First Floor, 620, Diamond Harbour Road, Kolkata-700034 Phone: 91-33-64996700,64996701, Fax: 91-33-24470267 Regd & Corp. Oil: SGS House, 4B. A.S. Marg. Viktimis (West), Mumbai-400983. Tel: (022) 25798421 to 28 Fitx: (022) 25798431 to 35 www.sgs.com

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JOE No. : 1212805062	Control No.:3125012285		: 10/08/201		
TESTS ZINC (as Zn) * Analyzed at site.	PROTOCOL	RESULT	REQUIREMENT/LIMI As per IS 10500:1991(REAFF 1993) Desirable Permissible		
	IS 3025 Part 49:1991(Reaff.2003) BY ICPOES	<0.01 mg/l	5mg/l	15mg/l	

per pro SGS India Private Ltd.

J.A. Auta Dr. Nemai Ghosh Manager Laboratory

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झारखण्ड राज्य प्रदूषण नियंत्रण पर्षद्

ज्ञारखण्ड स्थारखण्ड

JHARKHAND STATE POLLUTION CONTROL BOARD

CONSTITUTED UNDER SECTION 4 OF THE WATER (PREVENTION & CONTROL OF POLLUTION ACT, 1974 | T.A.DIVISION BUILDING (GROUND FLOOR), HEC COMPEX, DHURWA, RANCHI-834004.

Phone No:-0651- 2400852, 2400851, Fax No:-2400850.

Ref.No-PC/RNC/50/07-

Dat	A										
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CONSENT TO OPERATE

With reference to the application dated 28.08.2012 of G.M. (Operation), M/s Hindalo Industries Ltd; Court Road, I/C Pakhar Bauxite Mines-08.09 Ha, P.O+Dist- Lohardaga for consent under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and that under section 21 of the Air (Prevention & Control of Pollution) Act,1981, he (they) is (are) granted consent to bring into use his(their) new/altered/existing outlet(s) for discharge of trade effluent and (or) domestic sewage and to operate his (their) industrial plant to produce maximum 80,000 TPA of Bauxite At – Pakhar, P.O + Dist- Lohardaga for the period from 01.01.2013 to 31.12.2013 with the following conditions:

- That, he(they) shall not make any alteration, addition, deletion or modification in the mines without the prior clearance from the Board.
- That, he(they) shall abide by the obligations provided under section 24, 31 and 33A of the Water (Prevention & Control of Pollution) Act, 1974 and shall extend co-operation to the Board in performing its functions entrusted under section 20, 21, 23, 30 and 32 of the Act.
- That, he(they) shall comply with the requirements of the Water (Prevention & Control of Pollution)
 Cess Act, 1977 read with the Water (Prevention & Control of Pollution) Cess Rules, 1978.
- 4. That, he(they) shall abide by the obligations provided under section 22, 23 and 31A of the Air (Prevention & Control of Pollution) Act, 1981 and shall extend co-operation to the Board in performing its functions entrusted under sections 24, 25 and 26 of the Act.
- That, he(they) shall abide by the obligations provided under sections 5, 7, 8 and 9 of the Environment (Protection) Act, 1986 and shall extend co-operation in performing the functions entrusted under section 3, 10 and 11 of the Act.
- 6. That, he(they) shall abide by the applicable provisions of the Environment (Protection) Rules, 1986, the Hazardous Wastes (Management, Handling & Transboundry Movement) Rules, 2008; the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989; the Bio-medical Waste (Management & Handling) Rules, 1998; the Municipal Solid Wastes (Management & Handling) Rules, 2000 and the Batteries (Management & Handling) Rules, 2001.
- That, he(they) shall maintain the quality of discharge and (or) emission and (or) noise level of
 environmental pollutants in conformity with the standards as laid under Rule 3 of the Environment
 (Protection) Rules, 1986.
- That, he(they) shall monitor his(their) effluent(s), emission(s) and the ambient air, noise level regularly and shall submit the report to the Board in compliance of the condition laid in paragraph7.

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- That, he(they) shall establish well equipped environmental laboratory with the facilities of 9. system(s) of continuous monitoring of effluent(s), emission(s) ambient water quality(ies), ambient air quality(ies) and ambient noise level(s) and transferring them (monitoring results) to his(their) website(s) and to the e-mail address(es) of the key persons of Jharkhand State Pollution Control Board, Zonal Office, Kolkata and Ministry of Environment & Forests, Regional Office, Bhubaneswar with simultaneous displaying at prominent locations in front of his(their)premises. [*Unit(s) of medium and large scale under 17 categories of polluting industries of category A of EIA Notification, 2006.]
- That, he(they) shall submit the environmental statement every year by 30th September and shall harvest all rain water precipitating in the premises and do three tier tree plantation in the premises as air barrier.
- 11. That, he(they) shall submit application for consent under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and that under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 again 120 days before the expiration of the consent order 31.12.2013 or within 120 days from the date of receipt of the order, whichever is earlier.
- That, unit shall submit quality report of Ambient Air Quality and Ground Water Quality every quarter of the year.
- That, unit shall submit the status of compliance Environmental Clearance every quarter to the 13.
- That, unit) shall reclaim the mined out area in phased manner as per EIA/EMP report. 14.
- That, the unit shall implement harvest rain water of the mine and recharge it to the ground by the 15. method of Central Ground Water Board Guideline that fits most to the mine.
- 16. That, the unit shall make arrangement to control the fugitive emissions occurring during the mining activities and plying of vehicles on haul as well as transport roads.
- That, the unit shall ensure that no transport vehicle should ply on road without covering the 17. materials.
- That, the proponent shall submit compliance report of Environmental Clearance dated 24.01.2007 18. and submit photographs in compliance of special condition No. VII and IX of the same.

Sd/-(Sanjay Kumar Sinha) MEMBER SECRETARY

Memo no. PC/RNC/50/07- 6.346

Copy forwarded to:- G.M. (Operation), M/S Hindalco Industries Ltd; (I/C Pakhar Bauxite Mines-08.09 Ha.), Court Road, P.O+Dist- Lohardaga/ Deputy Commissioner, Lohardaga/ D.F.O, Ranchi West Forest Division, Lohardaga/ D.M.O, Lohardaga/ Regional Officer, Regional Office, Ranchi for information & necessary action.

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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.

SI No	Description	Budget (in Lakh Rs.)	Actual (in Lakh Rs.)
1	Pollution Control & Environment	7.50	FY 2012-2013
_	monitoring		
2	Reclamation/ Back filing & Rehabilitation	**	46.60
3	Green belt & Plantation	25.00	88.09
4	Rural Development	65.00	81.50

^{**}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)
- 9. 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.

DETAILS OF PRODUCTION, OVERBURDEN HANDLING, AREA MINED OUT AND AREA RECLAIMED FROM APR-12 TO MAR-13

SN	Name of Leases	Lease Area (in Ha)	Production (in MT)	Overburden Handling (in MT)	Mined Out Area (in Acres)	Reclaimed Area (in Acres)
1	Pakhar Bauxite Mines	8.09	78470	51682	0.75	110
2	Pakhar (115.13)	115.13	208503	425872	7.42	2.42
3	Gurdari	584.19	324648	832640	14.70	24.80
4	Kujam-l	80.87	149018	158530	14 70	12.10
2	Kujam-II	157.38	149542	677633	18 18	11.10
9	Amtipani	190.95	149579	468731	18.02	15.37
7	Shrengdag	155.81	259630	570878	10.02	15.57
∞	Serengdag Bauxite Mines	140.06	62256	122000	19.30	25.00
6	Jalim & Sanai	12.14	49505	24420	1 24	5.80
10	Bagru	75.41	84320	188767	1.24	0.80
11	Hisri New	14.55	99651	115676	1.70	9.69
12	Chiro-Kukud	152.57	64847	78598	3 13	0.00
M/s Miner	M/s Minerals & Minerals Limited				01:0	7:27
1	Pakhar Bauxite Mines	15.58	34445	115848	1.25	00 0
2	Pakhar (109.507)	109.507	99840	204868	6.76	1.03
			0.000	000107	00	T.37