

Ref No: HIL/LHD/VP (M)/MoEF/ 125

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 Chiro-Kukud (152.57 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Latehar, Jharkhand for the period Oct' 2012 - March' 2013.

Ref: Environmental Clearance letter no J-11015/240/2006-IA II(M) dated 17th May 2007


Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Chiro-Kukud (152.57 ha)** Bauxite Mining project of M/s Hindalco Industries Limited located in Latehar, 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 Clearance

CHIRO KUKUD BAUXITE MINES

Period : Oct'12 – March'13

J-11015/240/2006-IA.II (M) Dated 17.5.2007

Sl No	Conditions	Compliance Status
Specific Conditions		
1	Environmental Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa foundation Vs Union of India in writ petition (civil) no 460 of 2004, as may be applicable to this project	It will be complied with as per the final decision of Hon'ble Supreme Court.
2.	Environmental Clearance is subject to obtaining clearance from Wildlife (Protection) Act '1972 from the competent authority.	Wildlife Management plan has been accepted by Chief Wildlife Warden, Jharkhand vide letter no 75(vivid)/940 dated 22.10.2008.
3.	All the conditions stipulated by SPCB in their NOC shall be effectively implemented.	Complied.
4	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
5	Mining shall not intersect groundwater. The mine working shall be restricted to above 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 is being carried out at shallow depth, at no point of time mining activities will intersect the ground water table.
6	The project proponent shall ensure that the mining shall be carried out in small blocks and at a given point of time active mining shall not be more than 2.0 ha.	complied
7.	The project proponent shall ensure that no natural water course shall be obstructed due to any mining operations.	Complied, no natural water course is being obstructed due to any mining operations.
8	Top soil, if any, 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 is being practiced during mining operation.

9.	The overburden generated during the initial year shall be kept as temporary dump. Concurrent backfilling starts from the 2 nd year onwards and there shall be no external dump at the end of the mine life.	Complied
10.	The entire excavated area of 86 ha shall be reclaimed, out of which 66 ha land shall be returned to rayats for agricultural purpose and in 20 ha plantation shall be raised. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six month basis.	Will be complied with progress of mining work
11	<p>Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after monsoon and maintained properly.</p> <p>Garland drain (size, gradient and length) shall be constructed for mine pit and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.</p>	Complied.
12	Dimension of the retaining wall at the OB benches within the mine to check run-off and siltation should be based on rainfall data.	Will be complied
13	Plantation shall be raised in an area of 20.0 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.	Will be carried out with progress of mining activity.
14	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.	Will be complied.

15	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
16	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	Agreed
17	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.	Vehicle engaged in mining operation are regularly checked and maintenance of vehicles is being done. The vehicles are being covered with tarpaulin.
18	Drills should either be operated with dust extractors or should be equipped with water injection system.	Wet drilling is being done in the holes for dust suppression, for jack hammer type drilling.
19	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 - fixed blasting period of 12.00 Noon to 1.00 Pm on working days. All the precautionary and mitigative measures to control ground vibration and to arrest generation of fly rocks are being implemented.
20	Consent to operate should be obtained from SPCB prior to start of enhanced production from the mine.	Obtained & a copy is enclosed as annexure
21	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 is not required to install. The sewage water from domestic uses is treated through septic tanks and soaks pits.
22	The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Leopard, Indian Wolf, Indian elephant, Indian small civet, 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	Wildlife Management plan has been accepted by Chief Wildlife Warden, Jharkhand vide letter no 75(vivid)/940 dated 22.10.2008.

	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.	
23	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 will be submitted in appropriate time and will be intimated to concerned authority.

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	Agreed.
2	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.	Complied.
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 has been fixed and regular monitoring is being done. Monitoring Reports of AAQ data is attached as Annexure
4	Data on ambient air quality (RPM, SPM, SO ₂ , NO _x) should be regularly submitted to the Ministry including its Regional office located at Bhubneshwar and the State Pollution Control Board / Central pollution Control Board once in six months.	Complied. Monitoring Reports is attached as Annexure
5	Fugitive dust emission from all the sources should be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points should be provided and properly maintained.	Water tanker with sprinkling facility have been provided for haul roads, loading unloading & at transfer points.
6	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operation of HEMM, etc.	Complied. PPE provided to all operators within the work zone.

	should be provided with ear plug / muffs.	
7	Industrial waste water (workshops and waste water from the mine) Should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May, 1993 and 31 st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	Presently, there is no generation of waste water from the mine.
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. PPE provided to workers. Training is being provided through VT centre. Health survey will be done with progress of mining
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.	Complied. A suitable environmental management cell has been developed with qualified personal. Copy enclosed.
10	The project authorities should inform to the Regional Office located at Bhubneshwar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Final mine closure plan will be submitted in appropriate time and will be intimated to concerned authority.
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.	Complied. . (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.	Agreed.
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	complied

	Regional Office, Bhubneshwar CPCB and State Pollution Control Board.	
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.	Complied
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.	Already done and copies submitted with earlier six monthly compliance report.



Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

Report No : KG13-001948.001

JOE No : KG13-001948

Report Control No : KGR0000012042
Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : AMBIENT AIR QUALITY MONITORING
Received : 12/03/2013
Registered : 12/03/2013
Marks on Sample : Location :New Samri Weight Bridge(Gopato Village), date : 19.02.2013
Sampling Site : Chiro-kukud Bauxite Mines
Test Start/End Date : 12/03/2013 - 18/03/2013

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS:5182 (Part-23):2006	69	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	27.26	ug/m3	-	60
Oxides of Nitrogen (NOx)	IS:5182 (Part-6):1975 (Reaff.2004)	7.77	ug/m3	-	80
Sulphur Dioxide (SO2)	IS:5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3	-	80
Carbon Monoxide	By NDIR Spectroscopy.	<0.10	PPM		

Remark : CO Analyzed at site.

Page 1 of 2

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Test Report

Report No : KG13-001948.001

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

JOE No : KG13-001948

Report Control No : KGR0000012042

Per pro SGS India Private Ltd

Satya Manna

Section Incharge - ENVI

Authorized Signatory

****End of Report****

Page 2 of 2

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Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

Report No : KG13-001948.002

JOE No : KG13-001948

Report Control No : KGR0000012042
Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : AMBIENT AIR QUALITY MONITORING
Received : 12/03/2013
Registered : 12/03/2013
Remarks on Sample : Location : Orsa Village, Date : 19.02.2013
Sampling Site : Chiro-kukud Bauxite Mines
Test Start/End Date : 12/03/2013 - 18/03/2013

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS:5182 (Part-23):2006	77	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	36.46	ug/m3	-	60
Oxides of Nitrogen (NOx)	IS:5182 (Part-6):1975 (Reaff.2004)	5.30	ug/m3	-	80
Sulphur Dioxide (SO2)	IS:5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3	-	80
Carbon Monoxide	By NDIR Spectroscopy.	<0.10	PPM		

Remark : CO Analyzed at site.

Page 1 of 2

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Test Report

Print Date : 18/03/2013

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Report No : KG13-001948.002

JOE No : KG13-001948

Report Control No : KGR0000012042

Per pro SGS India Private Ltd

Satya Manna
Section Incharge - ENVI
Authorized Signatory

****End of Report****

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Test Report

Print Date : 18/03/2013

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Report No : KG13-001948.003

JOE No : KG13-001948

Report Control No : KGR0000012042

Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : AMBIENT AIR QUALITY MONITORING
Received : 12/03/2013
Registered : 12/03/2013
Remarks on Sample : Location : Mine Lease Area, date : 20.02.2013
Sampling Site : Chiro-kukud Bauxite Mines
Test Start/End Date : 12/03/2013 - 18/03/2013

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS:5182 (Part-23):2006	46	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	22.44	ug/m3	-	60
Oxides of Nitrogen (NOx)	IS:5182 (Part-6):1975 (Reaff.2004)	6.84	ug/m3	-	80
Sulphur Dioxide (SO2)	IS:5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3	-	80
Carbon Monoxide	By NDIR Spectroscopy.	<0.10	PPM		

Remark : CO Analyzed at site.

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Test Report

Report No : KG13-001948.003

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

JOE No : KG13-001948

Report Control No : KGR0000012042

Per pro SGS India Private Ltd

Satya Manna

Section Incharge - ENVI

Authorized Signatory

****End of Report****

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Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

Report No : KG13-001948.004

JOE No : KG13-001948

Report Control No : KGR0000012042
Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : AMBIENT AIR QUALITY MONITORING
Received : 12/03/2013
Registered : 12/03/2013
Remarks on Sample : Location : Saraidih camp, date : 20.02.2013
Sampling Site : Chiro-kukud Bauxite Mines
Test Start/End Date : 12/03/2013 - 18/03/2013

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS:5182 (Part-23):2006	45	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	19.84	ug/m3	-	60
Oxides of Nitrogen (NOx)	IS:5182 (Part-6):1975 (Reaff.2004)	9.61	ug/m3	-	80
Sulphur Dioxide (SO2)	IS:5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3	-	80
Carbon Monoxide	By NDIR Spectroscopy.	<0.10	PPM		

Remark : CO Analyzed at site.

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Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

Report No : KG13-001948.004

JOE No : KG13-001948

Report Control No : KGR0000012042

Per pro SGS India Private Ltd

Satya Manna
Section Incharge - ENVI
Authorized Signatory

****End of Report****

Page 2 of 2

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Test Report

Print Date : 18/03/2013

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Report No : KG13-001948.005

JOE No : KG13-001948

Report Control No : KGR0000012042

Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : AMBIENT AIR QUALITY MONITORING
Received : 12/03/2013
Registered : 12/03/2013
Marks on Sample : Location : Jaljali Village, date : 21.02.2013
Sampling Site : Chiro-kukud Bauxite Mines
Test Start/End Date : 12/03/2013 - 18/03/2013

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS:5182 (Part-23):2006	79	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	36.86	ug/m3	-	60
Oxides of Nitrogen (NOx)	IS:5182 (Part-6):1975 (Reaff.2004)	7.08	ug/m3	-	80
Sulphur Dioxide (SO2)	IS:5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3	-	80
Carbon Monoxide	By NDIR Spectroscopy.	<0.10	PPM		

Per pro SGS India Private Ltd

Satya Manna

Section Incharge - ENVI

Authorized Signatory

Page 1 of 2

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Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

Report No : KG13-001948.005

JOE No : KG13-001948

Report Control No : KGR0000012042

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Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 22/03/2013

Report No : KG13-001962.001

JOE No : KG13-001962

Report Control No : KGR0000012738
Sample Described by Customer as : SOIL(COMPOSITE)

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : SOIL(COMPOSITE)
Received : 12/03/2013
Registered : 12/03/2013
Marks on Sample : Location:Kukud Mines New Reclaim area
Sampling Site : Chiro-kukud Bauxite mines
Sample Collected on : 20.02.2013
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 Suspension. (1 : 2 aqueous solution)	F.A.U.N (2007)	103.4	1.00	µs/cm
pH (1:2) Soil Suspension (1 : 2 aqueous solution)	F.A.U.N (2007)	5	0.50	--
Porosity	F.A.U.N (2007)	57.52	-	%
Bulk Density	By Bulk Density Apparatus	1.02	0.10	gram/ml
Phosphorus (as P)	F.A.U.N (2007)	21.127	20.00	mg/kg
Texture	F.A.U.N (2007)	Sandy clay loam	-	
Clay	F.A.U.N (2007)	30.0	5.00	%
Sand	F.A.U.N (2007)	47.5	1.00	%
Silt	F.A.U.N (2007)	22.5	1.00	%
Available Chloride (as Cl)	Soil & Agriculture Organization (U.N-2007)	26.45	20.00	mg/kg
Available Nitrogen	Food & Agriculture Organization (U.N-2007)	358.39	20.00	mg/kg
Available Potassium (as K)	Soil & Water Book By P.K. Gupta	1691.77	1.00	mg/kg
Available Magnesium (as Mg)	Soil & Water Book By P.K. Gupta	2463.06	1.00	mg/kg
Lead (as Pb)	USEPA 3052	10.92	2.00	mg/kg

Page 1 of 2

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Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 22/03/2013

Report No : KG13-001962.001

JOE No : KG13-001962

Report Control No : KGR0000012738

Analysis	Method	Result	Limit of Reporting (LOR)	Unit
Chromium (as Cr)	USEPA 3052	48.52	2.00	mg/kg
Mercury (as Hg)	USEPA 3052	1.23	1.00	mg/kg
Total Organic Matter	Black & Walkely Wet Digestion Method	0.84	0.01	%

Per pro SGS India Private Ltd

Satya Manna

Section Incharge - ENVI

Authorized Signatory

****End of Report****

Page 2 of 2

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Test Report

Print Date : 22/03/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-001962.002

JOE No : KG13-001962

Report Control No : KGR0000012738
Sample Described by Customer as : SOIL(COMPOSITE)

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : SOIL(COMPOSITE)
Received : 12/03/2013
Registered : 12/03/2013
Marks on Sample : Location:Kukud Mines Old Reclaim Area
Sampling Site : Chiro-kukud Bauxite Mines
Sample Collected on : 20.02.2013
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 Suspension. (1 : 2 aqueous solution)	F.A.U.N (2007)	30.9	1.00	µs/cm
pH (1:2) Soil Suspension (1 : 2 aqueous solution)	F.A.U.N (2007)	6	0.50	-
Porosity	F.A.U.N (2007)	48.45	-	%
Bulk Density	By Bulk Density Apparatus	1.15	0.10	gram/ml
Phosphorus (as P)	F.A.U.N (2007)	<20.000	20.00	mg/kg
Texture	F.A.U.N (2007)	Sandy clay	-	
Clay	F.A.U.N (2007)	40.0	5.00	%
Sand	F.A.U.N (2007)	52.5	1.00	%
Silt	F.A.U.N (2007)	7.5	1.00	%
Available Chloride (as Cl)	Soil & Agriculture Organization (U.N-2007)	22.44	20.00	mg/kg
Available Nitrogen	Food & Agriculture Organization (U.N-2007)	295.24	20.00	mg/kg
Available Potassium (as K)	Soil & Water Book By P.K. Gupta	1517.29	1.00	mg/kg
Available Magnesium (as Mg)	Soil & Water Book By P.K. Gupta	2296.05	1.00	mg/kg
Lead (as Pb)	USEPA 3052	12.27	2.00	mg/kg

Page 1 of 2

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Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 22/03/2013

Report No : KG13-001962.002

JOE No : KG13-001962

Report Control No : KGR0000012738

Analysis	Method	Result	Limit of Reporting (LOR)	Unit
Chromium (as Cr)	USEPA 3052	55.94	2.00	mg/kg
Mercury (as Hg)	USEPA 3052	<1.00	1.00	mg/kg
Total Organic Matter	Black & Walkely Wet Digestion Method	0.59	0.01	%

Per pro SGS India Private Ltd

Satya Manna

Section Incharge - ENVI

Authorized Signatory

****End of Report****

Page 2 of 2

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Test Report

Print Date : 01/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002100.001

JOE No : KG13-002100

Report Control No : KGR0000013695

Sample Described by Customer as : GROUND WATER

Client Name : Hindalco Industries Limited(Mines Division)
 Client Address : Lohardaga,
 Postal Code : 835203
 State : Jharkhand
 Country : India
 Sample Type : GROUND WATER
 Received : 18/03/2013
 Registered : 18/03/2013
 Marks on Sample : Location : ~~Sami~~-Chirokukud /
 Quantity : 5.5L app
 Sample Collected : 14.03.2013, time : 10.00 am
 Test Start/End Date : 18/03/2013 - 01/04/2013

Analysis	Method	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
pH	IS:3025 (Part-11):1983 (Reaff.2006)	7.10*		6.5	8.5
Total Hardness (as CaCO ₃)	IS:3025 (Part-21):1983 (Reaff.2006)	153.52	mg/L	200	600
Iron (as Fe)	IS:3025 (Part-2)	0.12	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 Cl)	IS:3025 (Part-32):1988 (Reaff.1999)	<5.00	mg/L	250	1000
Total Dissolved Solids	IS:3025 (Part-16):1984 (Reaff.1996)	208.00	mg/L	500	2000
E.coli	IS:1622:1981(Reaff.2003)	Absent	per 100ml		Absent/100ml
Coliform bacteria	IS:1622-1981 (Reaffirmation 2003)	Absent	per 100ml		Absent/100ml
Calcium (as Ca)	IS:3025 (Part-40):1991 (Reaff.2003)	37.98	mg/L	75	200
Magnesium (as Mg)	IS:3025 (Part-46):1994 (Reaff.1999)	14.23	mg/L	30	100

Page 1 of 3

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Test Report

Print Date : 01/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002100.001

JOE No : KG13-002100

Report Control No : KGR0000013695

Analysis	Method	Result	Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissible
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)	<0.50	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)	0.013	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	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)	187.53	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	0.11	mg/L	0.5	1.0
Turbidity	IS:3025 (Part-10):1984 (Reaff.2006)	0.52	NTU	1	5

Remark : *Analyzed at site.

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Test Report

Print Date : 02/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002097.006

JOE No : KG13-002097

Report Control No : KGR0000013918

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: Samri-Chirokukud
 Quantity : 5.5L app
 Sample Collected : 14.03.2013, time : 12.30 pm
 Test Start/End Date : 18/03/2013 - 01/04/2013

Analysis	Method	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
pH	IS:3025 (Part-11):1983 (Reaff.2006)	7.10*		6.5	8.5
Total Hardness (as CaCO ₃)	IS:3025 (Part-21):1983 (Reaff.2006)	109.08	mg/L	200	600
Iron (as Fe)	IS:3025 (Part-2)	0.13	mg/L	0.3	No relaxation
Fluoride (as F)	IS:3025 (Part-60):2008	0.25	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 Cl)	IS:3025 (Part-32):1988 (Reaff.1999)	5.39	mg/L	250	1000
Total Dissolved Solids	IS:3025 (Part-16):1984 (Reaff.1996)	138.00	mg/L	500	2000
E.coli	IS:1622:1981(Reaff.2003)	Absent	per 100ml		Absent/100ml

Page 1 of 3

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Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 01/04/2013

Report No : KG13-002100.001

JOE No : KG13-002100

Report Control No : KGR0000013695

Per pro SGS India Private Lt

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'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.

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Test Report

Print Date : 02/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002097.006

JOE No : KG13-002097

Report Control No : KGR0000013918

Analysis	Method	Result	Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissible
Coliform bacteria	IS:1622-1981 (Reaffirmation 2003)	Present	per 100ml		Absent/100ml
Calcium (as Ca)	IS:3025 (Part-40):1991 (Reaff.2003)	26.66	mg/L	75	200
Magnesium (as Mg)	IS:3025 (Part-46):1994 (Reaff.1999)	10.31	mg/L	30	100
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 SO ₄)	IS:3025 (Part-24):1986 (Reaff.1998)	<2.00	mg/L	200	400
Nitrate (as NO ₃)	IS:3025 (Part-34):1988 (Reaff.1999)	4.20	mg/L	45	No relaxation
Phenolic Compound (as C ₆ H ₅ OH)	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)	0.028	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	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 CaCO ₃)	IS:3025 (Part-23):1986 (Reaff.2003)	110.31	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	0.11	mg/L	0.5	1.0
Turbidity	IS:3025 (Part-10):1984 (Reaff.2006)	1.57	NTU	1	5

Page 2 of 3

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Test Report

Print Date : 02/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002097.006

JOE No : KG13-002097

Report Control No : KGR0000013918

Analysis

Method

Result

Unit

Requirement/Limit
As per IS:10500:2012

Acceptable Permissible

Remark : *Analyzed at site.

Per pro SGS India Private Lt

Asish Chakraborty
Laboratory Manager
Authorized Signatory

****End of Report****

Page 3 of 3

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TEST REPORT

Report No. : CA:GL:3120015203

DATE : 18/10/2012

JOE No. : 1212806597

Report Control No.:3125016280

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 N.A.
SAMPLE DESCRIPTION AMBIENT AIR QUALITY MONITORING

MARK/LOCATION SITE:CHIRO-KUKUD BAUXITE MINES
LOCATION:JALJALI VILLAGE (BUFFER ZONE)
DATE:02.10.12 TO 03.10.12

SAMPLE RECD ON 11/10/2012
TEST START DATE 11/10/2012
TEST END DATE 18/10/2012

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	5.5 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	65.0 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	26.8 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.

S. A. Datta
Asish Chakraborty
Manager Laboratory

Page 1 of 1

A. N. Datta
Chemist cum QA

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TEST REPORT

Report No. : CA:GL:3120015204

DATE : 18/10/2012

JOE No. : 1212806597

Report Control No.:3125016281

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 N.A.
SAMPLE DESCRIPTION AMBIENT AIR QUALITY MONITORING

MARK/LOCATION SITE:CHIRO-KUKUD BAUXITE MINES
LOCATION:SARAI DIH CAMP (BUFFER ZONE)
DATE:02.10.12 TO 03.10.12

SAMPLE RECD ON 11/10/2012
TEST START DATE 11/10/2012
TEST END DATE 18/10/2012

Table with 4 columns: TESTS, PROTOCOL, RESULT, REQUIREMENT/LIMIT. Rows include CARBON MONOXIDE (CO), OXIDES OF NITROGEN (NOx), PARTICULATE MATTER(10), PARTICULATE MATTER(2.5), and SULPHUR DIOXIDE (SO2).

**** End of Report ****

per pro SGS India Private Ltd.

Signature of Asish Chakraborty, Manager Laboratory



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TEST REPORT

Report No. : CA:GL:3120015205

DATE : 18/10/2012

JOE No. : 1212806597

Report Control No.:3125016282

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 N.A.
 SAMPLE DESCRIPTION AMBIENT AIR QUALITY MONITORING

MARK/LOCATION SITE:CHIRO-KUKUD BAUXITE MINES
 LOCATION:MINE LEASE AREA (CORE ZONE)
 DATE:03.10.12 TO 04.10.12

SAMPLE RECD ON 11/10/2012
 TEST START DATE 11/10/2012
 TEST END DATE 18/10/2012

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	4.4 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	85.8 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	39.1 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.

S. A. Chakraborty
Asish Chakraborty
 Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120015206

DATE : 18/10/2012

JOE No. : 1212806597

Report Control No.:3125016296

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 N.A.
SAMPLE DESCRIPTION AMBIENT AIR QUALITY MONITORING

MARK/LOCATION SITE:CHIRO-KUKUD BAUXITE MINES
LOCATION:ORSA VILLAGE (BUFFER ZONE)
DATE:03.10.12 TO 04.10.12

SAMPLE RECD ON 11/10/2012
TEST START DATE 11/10/2012
TEST END DATE 18/10/2012

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	6.8 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	72.9 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	28.3 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.

S. A. Chakraborty
Asish Chakraborty
Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120013109

DATE : 12/09/2012

JOE No. : 1212805765

Control No.:3125014067

SAMPLE COLLECTED BY SGS

SAMPLE IDENTIFIED AS : GROUND WATER

COMPANY NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)

ADDRESS LOHARDAGA, JHARKHAND
CITY 835302

SAMPLING METHOD APHA 1060B 9060A

SAMPLE DESCRIPTION GROUND WATER

SAMPLE CONDITION IN PLASTIC BOTTLE

SAMPLE QTY. 6.5L APP

MARK/LOCATION CHIRO-KUKUD MINES

COLLECTED ON 01/09/12, TIME:4.00 PM

REGISTERED ON 03/09/2012

TEST START DATE 04/09/2012

TEST END DATE 12/09/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
ALKALINITY (as CaCO ₃)	IS 3025:PART 23 :1986(Reaff.1998)	172.80 mg/l	200mg/l	600mg/l
ALUMINIUM (as Al)	IS 3025 : Part 55 : 2003	<0.02 mg/l	0.03mg/l	0.2mg/l
ANIONIC DETERGENTS (as MBAS)	ANNEX. K of IS 13428: 2005	<0.05 mg/l	0.2mg/l	1mg/l
ARSENIC (as As)	IS 3025:PART 37:1988(Reaff.1999)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax.
BORON	Annex.H OF IS:13428:2005	<0.05 mg/l	1.0mg/l	5.0mg/l
CADMIUM (as Cd)	IS 3025:PART 41 :1992(Reaff.1998)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax.

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TEST REPORT

Report No. : CA:GL:3120013109

DATE : 12/09/2012

JOE No. : 1212805765

Control No.:3125014067

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			As per IS:10500:1991(REAFF.19 93)	
			Desirable	Permissible
CALCIUM (as Ca)	IS 3025:PART 40 :1991(Reaff.2003)	39.52 mg/l	75mg/l	200mg/l
CHLORIDE (as Cl)	Clause 2 of IS 3025 Part 32:1988(Reaff. 1999)	2.92 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/100 ml		ABS/100ml
Faecal coliforms	IS 1622:1981(Reaff2003)	Absent/100 ml		ABS/100ml
FLUORIDE	IS:3025(PART 60):2008	0.31 mg/l	1.0mg/l	1.5mg/l
IRON (as Fe)	IS 3025:PART 53:2003 (BY ICPOES)	0.18 mg/l	0.3mg/l	1 mg/l
LEAD (as Pb)	IS 3025:PART 47:1994(Reaff.2003) BY ICPOES	0.03 mg/l	0.05mg/l	No Relax.
MAGNESIUM (as Mg)	IS 3025:PART 46 :1994(Reaff.1999)	12.93 mg/l	30mg/l	100mg/l
MANGANESE	IS:3025(PART 59) 2006	0.06 mg/l	0.1mg/l	0.3mg/l

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TEST REPORT

Report No. : CA:GL:3120013109

DATE : 12/09/2012

JOE No. : 1212805765

Control No.:3125014067

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			As per IS:10500:1991(REAFF.19 93)	
			Desirable	Permissible
MERCURY (as Hg)	IS 3025:PART 48 :1994(Reaff.1999)BY ICPOES	<0.001 mg/l	0.001mg/l	No Relax.
MINERAL OIL	CLAUSE 6 OF IS 3025:PART 39:1991(Reaff. 2003)	BDL(DL-0.01 mg/l)	0.01mg/l	0.03mg/l
NITRATE	IS 3025:PART 34 :1988(Reaff.1999)	4.68 mg/l	45mg/l	No Relax.
ODOUR	IS 3025:PART 5:1983(Reaff.2002)	Unobjectionable	Unobject.	Unobject.
pH	IS 3025:PART 11:1983(Reaff.2002)	7.0 *	6.5-8.5	No Relax.
PHENOLIC COMPOUNDS (as C6H5OH)	IS 3025(Part 43)1992(Reaff 2005)	<0.001 mg/l	0.001mg/l	0.002mg/l
RESIDUAL FREE CHLORINE	GEN/SOP/CALLAB-13 3	<0.10 mg/l *	0.2mg/l	--
SELENIUM	IS 3025:PART 56:2003 (BY ICPOES)	<0.005 mg/l	0.01mg/l	No Relax.
SULPHATE	CLAUSE 4 OF IS 3025:PART 24:1986(Reaff. 2003)	<2.0 mg/l	200mg/l	400mg/l
TASTE	IS 3025:PART 7 :1984(Reaff.2002)	Agreeable	Agreeable	-
Total Coliforms	IS 1622:1981(Reaff.2003)	<2 MPN/100 ml		10/100 ml
TOTAL HARDNESS (as CaCO3)	IS 3025:PART 21 :1983(Reaff.2002)	152 mg/l	300mg/l	600mg/l
TURBIDITY(in NTU)	IS 3025:PART 10 :1984(Reaff.2002)	0.27	5.0NTU	10NTU

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TEST REPORT

Report No. : CA:GL:3120013109 **DATE : 12/09/2012**

JOE No. : 1212805765

Control No.:3125014067

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
ZINC (as Zn)	IS 3025 Part 49:1991(Reaff.2003) BY ICPOES	0.12 mg/l	5mg/l	15mg/l
TOTAL DISSOLVED SOLIDS	IS 3025:PART 16:1984(Reaff.2002)	218 mg/l	500mg/l	2000mg/l

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

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

per pro **SGS India Private Ltd.**

Dr.Nemai Ghosh
Manager Laboratory

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Ref.No- PC/RNC/230/07-

Date.....

CONSENT TO OPERATE

With reference to the application dated 28.08.2012 of G.M. (Operation), M/s ~~Hindale~~ Industries Ltd; Court Road, I/C Chiro Kukud Bauxite Mines-152.57 Ha, P.O+Dist- ~~Latehar~~ 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 1,00,000 TPA of Bauxite At – Chiro Kukud , P.O + Dist- ~~Latehar~~ for the period from 01.01.2013 to 31.12.2013 with the following conditions :

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

9. That, he(they) shall establish well equipped environmental laboratory with the facilities of system(s) of continuous monitoring of effluent(s), emission(s) ambient water quality(ies), ambient air quality(ies) and ambient noise level(s) and transferring them (monitoring results) to his(their) website(s) and to the e-mail address(es) of the key persons of Jharkhand State Pollution Control Board, Zonal Office, Kolkata and Ministry of Environment & Forests, Regional Office, 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.]
10. That, he(they) shall submit the environmental statement every year by 30th September and shall harvest all rain water precipitating in the premises and do three tier tree plantation in the premises as air barrier.
11. That, he(they) shall submit application for consent under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and that under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 again 120 days before the expiration of the consent order 31.12.2013 or within 120 days from the date of receipt of the order, whichever is earlier.
12. That, unit shall submit quality report of Ambient Air Quality and Ground Water Quality every quarter of the year.
13. That, unit shall submit the status of compliance Environmental Clearance every quarter to the Board.
14. That, unit) shall reclaim the mined out area in phased manner as per EIA/EMP report.
15. That, the unit shall implement harvest rain water of the mine and recharge it to the ground by the method of Central Ground Water Board Guideline that fits most to the mine.
16. That, the unit shall make arrangement to control the fugitive emissions occurring during the mining activities and plying of vehicles on haul as well as transport roads.
17. That, the unit shall ensure that no transport vehicle should ply on road without covering the materials.
18. That, the proponent shall submit compliance report of Environmental Clearance dated 17.05.2007 and submit photographs in compliance of special condition No. VIII and IX of the same.

Sd/- XI and XIV

Sd/-

(Sanjay Kumar Sinha)

MEMBER SECRETARY

Memo no. PC/RNC/230/07- 9-344

Ranchi, Dated 31/1/15

Copy forwarded to:- G.M. (Operation), M/S Hindalco Industries Ltd; (I/C Chiro Kukud Bauxite Mines- 152.57 Ha.), Court Road, P.O+Dist- Lohardaga/ Deputy Commissioner, Latehar D.F.O, Ranchi West Forest Division, Lohardaga/ D.M.O, Latehar/ Regional Officer, Regional Office, **Ranchi** for information & necessary action.

Sd/- 30/1

(Sanjay Kumar Sinha)

MEMBER SECRETARY



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.

Sl No	Description	Budget (in Lakh Rs.)	Actual (in Lakh Rs.) FY 2012-2013
1	Pollution Control & Environment monitoring	7.50	11.32
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.

HINDALCO INDUSTRIES LIMITED
Hindalco Complex
Court Road, Lohardaga-835302
Distt. Lohardaga (Jharkhand)

Telephone: +91 6526 224112/224015/223113
Fax: +91 6526 224118

Website: www.hindalco.com



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	1.10
2	Pakhar (115.13)	115.13	208503	425872	7.42	2.42
3	Gurdari	584.19	324648	832640	14.70	24.80
4	Kujam-I	80.87	149018	158530	14.70	12.10
5	Kujam-II	157.38	149542	677633	18.18	11.41
6	Amtipani	190.95	149579	468731	18.02	15.37
7	Shrengdag	155.81	259630	570878	19.50	35.00
8	Serengdag Bauxite Mines	140.06	99772	133089	6.52	5.80
9	Jalim & Sanai	12.14	49505	34438	1.24	0.80
10	Bagru	75.41	84320	188767	1.78	9.69
11	Hisri New	14.55	99651	115676	1.24	0.00
12	Chiro-Kukud	152.57	64847	78598	3.13	5.37
M/s Minerals & Minerals Limited						
1	Pakhar Bauxite Mines	15.58	34445	115848	1.25	2.00
2	Pakhar (109.507)	109.507	99840	204868	6.76	1.92