

BALCO/ENV/A-02(A)/2018/ 147

Dated: May 21, 2018
22

To,

Shri Kanwarjit Singh, APCCF (C)
Ministry of Environment, Forest and Climate Change ,
Regional Office(WCZ), Ground Floor ,
East Wing, New Secretariat Building,
Civil Lines,
Nagpur-440001

Dear Sir,

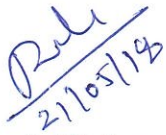
**Sub: Half yearly compliance Status report (October - 2017 to March – 2018)
of Mainpat Bauxite Mines, reg.**

This is in reference to the general condition no. xiii mentioned under the Environmental Clearance No. J - 11015/235/2007-IA II (M), dated 26 October 2010 & EC extension received vide letter dated 27/10/2015. Please find enclosed herewith the Half yearly compliance report of our Mainpat Bauxite Mines.

We hope that the above is in line with the requirements under the referred Environmental Clearance. In case you would require any further information or clarification, we would be glad to furnish the same.

Thanking you,

Yours truly,
For Bharat Aluminium Company Limited,


Rajesh Mishra
Head – Mines

Encl : a/a

Copy to: Regional Officer, CECB, Ambikapur (CG).

Compliance Status for Environmental Clearance No.J-11015/235/2007-IA.II (M)
Dated: 26th October 2010 and extension received for Environmental Clearance vide letter dated
27/10/2015

Mainpat Bauxite Mines, Surguja Distt., Chhattisgarh.
(October - 2017 to March- 2018)

A. Specific Conditions:

S.No.	Condition	Compliance status
i	Maintenance of village roads through which transportation of ore is undertaken shall be carried out by the company regularly at its own expenses. The roads shall be black topped.	A village road through which ore transportation takes place is being maintained by BALCO. The main haul road has been black topped.
ii	Rain water harvesting shall be undertaken to recharge the ground water. Status of implementation shall be submitted to the Regional Office of the Ministry within six months and thereafter every year from the next consequent year.	Rain water harvesting systems have been adopted in Mines area and Township to recharge the ground water. Status of the same was submitted to MoEF. Mined out pits have been developed as Rain water harvesting structures in the Mining Area. Please refer to Annexure -I.
iii	Ground water in the core zone shall be regularly monitored for depletion and contamination due to mining activity and mitigation measures undertaken to prevent adverse affects.	Three Piezometric wells have been constructed and the water quality being monitored regularly for the depletion and contamination. Our mining is open cast mining and confined to 8-10 m bgl and thus does not intersect with the ground water level. Please find attached the Ground water monitoring report as Annexure -II.
iv	Measures for prevention and control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion shall be carried out with geo-textile matting or other suitable material, and thick plantations of native trees and shrubs shall be carried out at the dump slopes. Dumps shall be protected by retaining walls.	The mined out areas are concurrently backfilled and thus as such no dumps are kept for long period. Temporary dumps are protected by retaining walls.
v	Trenches / garland drains shall be constructed at foot of dumps and coco filters installed at regular intervals to arrest silt from being carried to water bodies. Adequate number of Check Dams and Gully Plugs shall be constructed across seasonal/perennial nallahs (if any) flowing through the ML area and silts arrested. De-silting at regular intervals shall be carried out. Garland drain of appropriate size, gradient and length shall be constructed for both mine pit and for waste dump and sump capacity shall 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 shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and de-silted at regular intervals.	Total 66 no. of check dams have been constructed and catch pits /sedimentation pits have been provided at the end of the garland drains to arrest the silt. The catch pits/sedimentation pits are de-silted on regular basis.
vi	Water to be supplied for drinking purposes shall be treated to meet the prescribed standards. Monitoring of water quality for drinking shall be undertaken on daily basis especially for fluoride & arsenic and records maintained.	The drinking water is supplied from the nearby bore wells and water quality is regularly monitored for fluoride and arsenic monitored periodically and the records of the same is maintained. Please refer to Annexure -II

vii	Occupational health and safety measures for the workers including identification of work related health hazards, training on malaria eradication, HIV, and health effects on exposure to mineral dust etc. shall be carried out. The company shall engage a full time qualified doctor who is trained in occupational health. Periodic monitoring for exposure to respirable mineral dust on the workers shall be conducted and records maintained including health records of the workers. Awareness programme for workers on impact of mining on their health and precautionary measures like use of personal equipments etc. shall be carried out periodically. Review of impact of various health measures undertaken (at interval of five years or less) shall be conducted followed by follow up action wherever required.	Work related occupational health hazards have been identified and appropriate safety measures to mitigate these hazards are already being practiced as per DGMS and other statutory requirements BALCO has organized various camps on waterborne diseases, HIV and health effects on exposure to mineral dust from time to time. Periodic monitoring and health check-ups are carried out and records are maintained at site. Onsite and off-site awareness trainings on work related aspects and use of personal protective equipments (PPEs) to employees and workers are given on regular basis.
iii	Top soil and solid waste shall be stacked properly with proper slope and adequate safeguards and shall be utilized for backfilling (wherever applicable) for reclamation and rehabilitation of mined out area.	Top soil is stacked separately and for a period not more than six months, so that the soil could retain its nutrients value.
ix	Over burden (OB) shall be stacked at earmarked dump site(s) only and shall not be kept active for long period. The maximum height of the dump shall not exceed 30 m, each stage shall preferably be of 10 m and overall slope of the dump shall not exceed 28°. The OB dump shall be backfilled. The OB dumps shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests on six monthly basis.	Being shallow mine working, the concurrent backfilling system has been adopted which results to minimal time exposure of open pit/dump. Such backfilled area is afforested every year in this way land degradation is minimized in our mines therefore use of geo-textile is not required. Old dumps have been properly levelled and shall be planted in the coming monsoon season. No new dumps are envisaged.
x	Slope of the mining bench and ultimate pit limit shall be as per the mining scheme approved by Indian Bureau of Mines.	It is being Complied with scheme approved by IBM, however as we are concurrently backfilling the mined out area, and bench height is less than 10m., therefore, there is no risk of slope failure. Also we had conducted slope stability study through by NII Raipur.
xi	Drilling (if any) shall be conducted by using dust extractors/wet drilling. Controlled blasting shall be undertaken.	Wet drilling method has been adopted to control the dust and controlled blasting is carried out during 1:00 PM -2:00 PM.



xii	Green belt development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO / Agriculture Department. Herbs and shrubs shall also form a part of afforestation programme besides tree plantation. The density of the trees shall be around 2500 plants per ha. The company shall involve local people with the help of self help group for plantation programme. Details of year wise afforestation programme including rehabilitation of mined out area shall be submitted to the Regional Office of the Ministry every year.	Green belt development is carried out every year in and around the Mines with the native trees and fruit bearing species with the involvement of local people. Refer to Annexure No. III for the year-wise plantation details (no. of saplings and area of plantation).
xiii	Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall 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 shall be regularly sent to MoEF, Central Ground Water Authority and Regional Director, Central Ground Water Board.	Regular monitoring of ground water and surface water is carried out and reports are submitted to CECB. Refer to Annexure no II for the Water monitoring reports for pre-monsoon, monsoon & post-monsoon.
xiv	The waste water from the mine shall be treated to conform to the prescribe standards before discharging in to the natural stream. The discharged water from the Tailing Dam (if any) shall be regularly monitored and report submitted to the Ministry of Environment & Forests, Central Pollution Control Board and the State Pollution Control Board.	No waste water is generated from the mining operation as it is an opencast mining and is confined to a depth of 8-10 bgl. Only the rain water during rainy season is passed through garland drains, series of check dams and sedimentation pits
xv	Prior permission from the competent authority shall be obtained for extraction of ground water, if any.	Permission has been obtained. Please refer to Annexure – IV
xvi	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of ores and others shall have valid permissions as prescribed under Central Motor Vehicle Rules, 1989 and its amendments. Transportation of ore shall be done only during day time. The vehicles transporting ores shall be covered with a tarpaulin or other suitable enclosures so that no dust particles / fine matters escape during the course of transportation. No overloading of ores for transportation shall be committed.	Pollution under Control Certificate is verified for all the ore transporting vehicles and tarpaulin cover is ensured. Overloading of ores is not allowed.
xvii	Progressive reclamation of the mined out area shall be undertaken in conformity with the approved mine plan. A final mine closure plan, along with details of Corpus Fund, shall be submitted to the Ministry of Environment & Forests, 5 years in advance of final mine closure for approval.	Reclamation is carried out as per the approved Mine plan. A progressive Mine Closure Plan has already been submitted to MoEF. Presently we are having Mine plan & Progressive mine closure plan for next five year 2016-17 to 2020-21 duly approved by IBM.

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xviii	The critical parameters such as RSPM (Particulate matter with size less than 10micron i.e. PM10) and NOx in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.	The ambient Air Quality, peak particle velocity and water quality are monitored on regular basis .The reports for AAQ & water quality is uploaded to the company's website. Please refer to Annexure No. II & V for the monitoring reports.
xix	The project proponent shall obtain Consent to Establish and Consent to Operate from the Chhattisgarh Environment Conservation Board and effectively implement all the conditions stipulated therein.	Consent to operate under Air & Water Act obtained & renewed vide letter no 4026 & 4024/IS/CECB/2017 Naya Raipur 23/10/2017 valid upto 27/08/2018.
xx	The environmental clearance is subject to the condition, if any, stipulated by the IBM on the mining scheme submitted by the project proponent for its approval.	Being Complied with.

B. General Conditions:

S.No.	Condition	Compliance
i.	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment & Forests.	Complied.
ii	No change in the calendar plan including excavation, quantum of bauxite and waste shall be made.	Noted.
iii.	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for RPM, SPM, SO ₂ and NO _x monitoring. Location and number of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	Four ambient air quality monitoring stations have been established in the core zone as well as buffer zone for monitoring of RPM, SPM, SO ₂ and NO _x in consultation with State Pollution Control Board.
iv.	Data on ambient air quality RSPM (Particulate matter with size less than 10micron i.e., PM10) & NOx should be regularly submitted to the Ministry of Environment and Forests including its Regional office located at Lucknow and the State Pollution Control Board / Central Pollution Control Board once in six months.	Being Complied with We are regularly submitting the Ambient Air Quality monitoring reports. Please refer to Annexure No. V for the AAQ reports for the period of October-2017 to March - 2018
v.	Fugitive dust emission from all the sources shall be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points shall be provided and properly	The dust generated from haul roads, loading and unloading and at transfer points etc., is controlled by regular water sprinkling. Fugitive dust emissions are

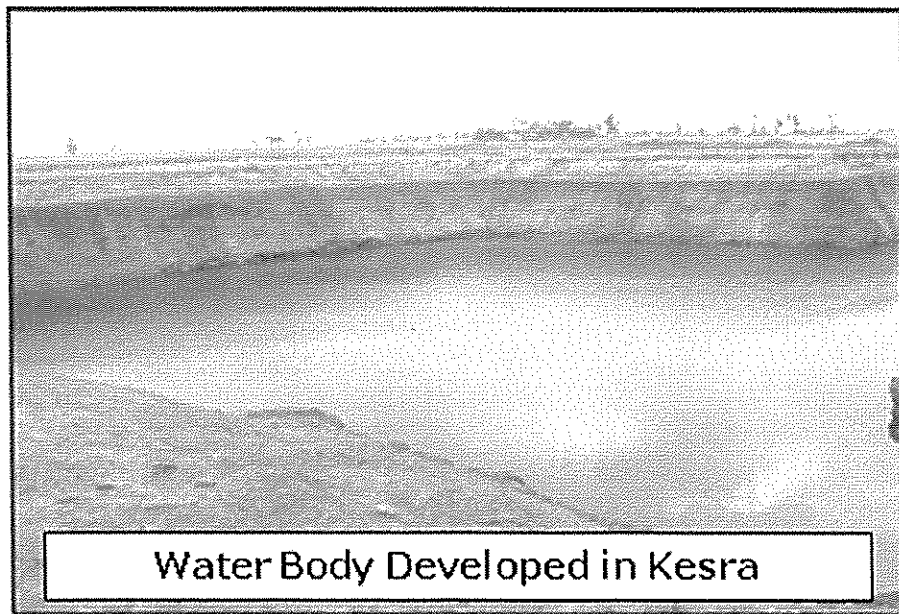
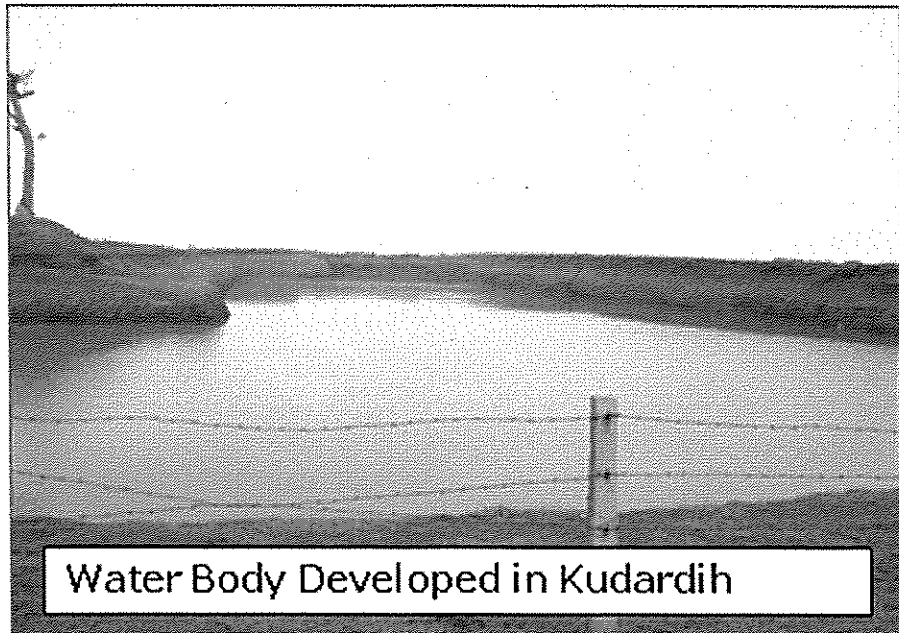
S.No.	Condition	Compliance
	maintained.	regularly monitored and data is maintained.
vi.	Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc, shall be provided with ear plugs / muffs.	Proper maintenance of equipment are regularly carried for keeping the noise within permissible limit. Operator cabins have been provided. Controlled blasting and other measures are taken for control of noise levels below 85 dBA in the work environment. Ear plugs and muffs are provided to the workers engaged in noisy operation. Equipment with inbuilt acoustics enclosures are now purchased, like DG sets.
vii.	Industrial waste water (workshop and waste water from 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 shall be installed before discharge of workshop effluents.	Oil and grease trap has been constructed for the waste water generated from the workshop and the clear water is used in gardening. No waste water is generated from mines operation.
viii.	Personnel working in dusty areas shall be provided with protective respiratory devices and they shall also be imparted adequate training and information on safety and health aspects.	Protective respiratory devices have been provided to the personnel working in dusty areas and training and information on safety and health aspects is imparted on monthly basis.
ix.	A separate Environmental Management Cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the Organization.	Environmental Management Cell is in place headed by Senior Executive, directly reporting to the CEO. The environment management cell is enabled by trained professionals in respective fields of environment, safety and occupational health. The team is also assisted by environmental laboratory having trained manpower for carrying out monitoring and analysis of various samples collected in and around project sites.
x.	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhopal, the respective Zonal Office of Central Pollution Control Board the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhopal, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board	The six monthly compliance report is submitted regularly to the Regional office of MoEF last submitted vide our letter no. BALCO/ENV/A 02(A)/2017/442 November 29, 2017. And the same is being sent to CECB. Also, the reports are being uploaded to the Company's website.

S.No.	Condition	Compliance
xi.	The project authorities shall inform to the Regional Office of the Ministry located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Being complied with
xii.	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure shall be reported to the Ministry and its Regional Office located at Bhopal.	Being complied with For year 2017-2018 total expenditure on environment protection measures was Rs 1.65 crores (Plantation, check dams, environment monitoring etc)
xiii.	The project authorities shall inform to the Regional Office located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Complied
xiv.	The Regional Office of the Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The project authorities shall extend full cooperation to the officer(s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	We are extending full cooperation to the officer(s) of the Statutory bodies.
xv.	A copy of this extension of validity of environmental clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.	Complied.
xvi.	State Pollution Control Board shall display a copy of this extension of validity of environmental clearance letter at the Regional office, District Industry Centre and Collector's office / Tehsildar s Office for 30 days.	Not applicable to us
xvii	The project authorities shall advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the Issue of this extension of validity of environmental clearance letter informing that the validity of environmental clearance has been extended up to 8th July,2012 and a copy of this extension 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 shall be forwarded to the Regional Office of the Ministry located in Bhopal.	Complied with. Refer to Annexure -VI for copy of the advertisement published in the local newspapers.
5.	The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.	Noted.
6.	Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986	Noted.
7.	Any appeal against this extension of validity of environmental clearance shall lie with the National Environment Appellate Authority, if preferred, within	Noted.

S.No.	Condition	Compliance
	a period of 30 days as prescribed under Section 11 of the National Environment Appellate Authority Act, 1997.	
8.	The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules.	Noted.
9.	This issues with the approval of the Competent Authority in the Ministry.	Noted.



ANNEXURE 1



R. & C. LABORATORY (BALCO, KORBA)
Environment Monitoring Section,

Annexure-II

REF : BALCO/QAP1/POLL/IMS 05/File-08B/MPT-WATER-1/Oct-17

DATE -18/10/2017

Water Analysis Report of Mainpat Mines.
Sampling Date - 06/10/2017

S.No.	Parameters	Units	W1	W2	W4	W5	W6	W7	W8	W9	W10
			Gungutta nallah Kesra	Gungutta nallah Pakri jharia	Mangarda nallah	Down stream 1km of W4	Gungutta nallah proposed T/S	Gungutta nallah 1 km down from W6	Manjharia nallah	Jokki nallah	Hand pump Kudaridih
1	pH		7.0	7.0	6.9	6.9	6.8	7.0	7.0	7.0	6.8
2	Turbidity	NTU	72	73	75	76	77	78	69	89	4.0
3	Conductivity	µS/cm	42.7	43.2	44.1	44.0	46.1	45.7	76.2	54.3	106.8
4	Solid (Total)	mg/l	114	117	115	118	117	121	108	130	59
5	Solid (Dissolved)	mg/l	69	70	65	67	68	70	60	77	40
6	Solid (Suspended)	mg/l	45	47	50	51	49	51	48	53	19
7	Chloride as Cl	mg/l	7.8	8.5	8.2	8.5	9.6	9.9	8.2	10.3	8.5
8	Fluoride as F	mg/l	0.21	0.22	0.23	0.23	0.24	0.23	0.21	0.23	0.22
9	Total Hardness as CaCO ₃	mg/l	47	49	49	50	50	53	52	50	38
10	Calcium Hardness as CaCO ₃	mg/l	30	31	31	32	35	37	33	33	22
11	Magnesium Hardness as CaCO ₃	mg/l	17	18	18	18	15	16	19	17	16
12	Oil & Grease	mg/l	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces
13	B.O.D.	mg/l	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
14	C.O.D	mg/l	4	4	3	4	3	4	3	4	3
15	Sodium as Na	mg/l	0.77	0.75	0.69	0.71	0.69	0.71	0.65	0.67	0.61
16	Potassium as K	mg/l	0.35	0.36	0.33	0.31	0.33	0.36	0.35	0.32	0.29
17	Iron as Fe	mg/l	0.37	0.36	0.36	0.35	0.37	0.35	0.36	0.34	0.33
18	Silica as Si	mg/l	1.13	1.06	1.03	1.08	1.06	1.07	1.08	1.09	0.95
19	Zinc as Zn	mg/l	0.004	0.004	0.003	0.004	0.003	0.004	0.004	0.005	0.003
20	Manganese as Mn	mg/l	0.003	0.004	0.003	0.004	0.004	0.003	0.004	0.003	0.002
21	Nickel as Ni	mg/l	0.003	0.003	0.003	0.002	0.002	0.002	0.003	0.003	0.002
22	Chromium as Cr	mg/l	0.002	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23	Lead as Pb	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Copy to :
GM (HSE)

Analysed by

Approved by
Manager (QA)

R. & C. LABORATORY (BALCO, KORBA)
Environment Monitoring Section

REF : BALCO/QAP1/POLL/IMS 05/File-08B/MPT-WATER-1/NOV-17

DATE -16/11/2017

Water Analysis Report of Mainpat Mines.
Sampling Date - 11/11/2017

S.No.	Parameters	Units	W1	W2	W4	W5	W6	W7	W8	W9	W10
			Gungutta nallah Kesra	Cungutta nallah Pakri jharia	Mangarda nallah	Down stream 1km of W4	Cungutta nallah proposed T/S	Gungutta nallah 1 km down from W6	Manjharia nallah	Jokki nallah	Hand pump Kudaridih
1	pH		7.0	7.0	6.9	7.1	7.0	6.9	7.1	7.0	6.7
2	Turbidity	NTU	70	71	72	75	70	77	68	85	3.6
3	Conductivity	µS/cm	44.2	44.7	45.1	44.6	47.2	46.5	77.1	52.1	105.9
4	Solid (Total)	mg/l	110	117	116	118	119	121	109	131	56
5	Solid (Dissolved)	mg/l	66	65	62	65	72	68	62	78	43
6	Solid (Suspended)	mg/l	44	52	54	53	47	53	47	53	13
7	Chloride as Cl	mg/l	9.2	7.8	9.2	8.5	9.9	9.2	8.5	9.2	7.8
8	Fluoride as F	mg/l	0.21	0.19	0.20	0.23	0.21	0.20	0.20	0.21	0.23
9	Total Hardness as CaCO ₃	mg/l	51	49	50	51	50	52	52	50	39
10	Calcium Hardness as CaCO ₃	mg/l	34	31	30	32	33	33	33	32	23
11	Magnesium Hardness as CaCO ₃	mg/l	17	18	20	19	17	19	19	18	16
12	Oil & Grease	mg/l	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces
13	B.O.D.	mg/l	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
14	C.O.D	mg/l	4	4	3	4	3	4	4	3	3
15	Sodium as Na	mg/l	0.77	0.75	0.70	0.72	0.69	0.71	0.65	0.66	0.60
16	Potassium as K	mg/l	0.31	0.33	0.31	0.32	0.34	0.35	0.32	0.31	0.29
17	Iron as Fe	mg/l	0.37	0.39	0.36	0.35	0.34	0.35	0.35	0.37	0.32
18	Silica as Si	mg/l	1.10	1.07	1.05	1.07	1.08	1.10	1.11	1.09	0.95
19	Zinc as Zn	mg/l	0.003	0.002	0.003	0.003	0.003	0.003	0.002	0.003	0.003
20	Manganese as Mn	mg/l	0.004	0.003	0.004	0.002	0.004	0.003	0.003	0.004	0.002
21	Nickel as Ni	mg/l	0.004	0.002	0.004	0.004	0.003	0.004	0.003	0.004	0.003
22	Chromium as Cr	mg/l	0.002	BDL	BDL	BDL	BDL	BDL	0.001	BDL	BDL
23	Lead as Pb	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Copy to :
GM (HSE)

Analysed by

Approved by
Manager (QA)

R. & C. LABORATORY (BALCO, KORBA)
Environment Monitoring Section

REF : BALCO/QAP1/POLL/IMS 05/File-08B/MPT-WATER-1/DEC-17

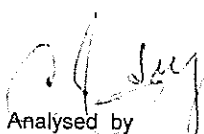
DATE -18/12/2017

Water Analysis Report of Mainpat Mines.

Sampling Date - 11/12/2017

S.No.	Parameters	Units	W1	W2	W4	W5	W6	W7	W8	W9	W10
			Gungutta nallah Kesra	Gungutta nallah Pakri jharia	Mangarda nallah	Down stream 1km of W4	Gungutta nallah proposed T/S	Gungutta nallah 1 km down from W6	Manjharia nallah	Jokki nallah	Hand pump Kudaridih
1	pH		6.9	7.0	7.0	7.2	7.0	7.1	7.0	7.1	6.8
2	Turbidity	NTU	65	68	66	70	68	71	63	81	3.4
3	Conductivity	µS/cm	42.9	43.8	44.3	44.1	46.8	45.9	80.2	51.8	104.5
4	Solid (Total)	mg/l	106	113	109	115	114	123	103	126	59
5	Solid (Dissolved)	mg/l	64	67	65	68	69	71	62	72	45
6	Solid (Suspended)	mg/l	42	46	44	47	45	52	41	54	14
7	Chloride as Cl	mg/l	8.5	8.2	8.9	8.2	9.2	8.5	8.2	8.9	8.2
8	Fluoride as F	mg/l	0.20	0.21	0.19	0.22	0.23	0.21	0.19	0.22	0.24
9	Total Hardness as CaCO ₃	mg/l	48	47	46	48	47	49	46	48	38
10	Calcium Hardness as CaCO ₃	mg/l	33	32	31	32	32	33	31	32	25
11	Magnesium Hardness as CaCO ₃	mg/l	15	15	15	16	15	16	15	16	13
12	Oil & Grease	mg/l	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces
13	B.O.D.	mg/l	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
14	C.O.D	mg/l	3	3	4	4	4	5	3	4	3
15	Sodium as Na	mg/l	0.73	0.74	0.69	0.70	0.72	0.70	0.63	0.68	0.64
16	Potassium as K	mg/l	0.32	0.35	0.33	0.34	0.32	0.33	0.34	0.32	0.28
17	Iron as Fe	mg/l	0.38	0.37	0.37	0.36	0.37	0.36	0.34	0.36	0.34
18	Silica as Si	mg/l	1.13	1.11	1.07	1.09	1.14	1.12	1.08	1.13	0.98
19	Zinc as Zn	mg/l	0.004	0.003	0.004	0.004	0.003	0.004	0.003	0.004	0.004
20	Manganese as Mn	mg/l	0.003	0.004	0.003	0.003	0.003	0.004	0.004	0.005	0.003
21	Nickel as Ni	mg/l	0.003	0.004	0.003	0.004	0.004	0.003	0.004	0.003	0.004
22	Chromium as Cr	mg/l	0.002	BDL	BDL	BDL	BDL	BDL	0.002	BDL	BDL
23	Lead as Pb	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

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Manager (QA)

R. & C. LABORATORY (BALCO, KORBA)
Environment Monitoring Section

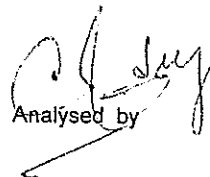
REF : BALCO/QAP1/POLL/IMS 05/File-08B/MPT-WATER-1/DEC-17

DATE -18/12/2017

Water Analysis Report of Mainpat Mines.
Sampling Date - 11/12/2017

S.No.	Parameters	Units	W1	W2	W4	W5	W6	W7	W8	W9	W10
			Gungutta nallah Kesra	Gungutta nallah Pakri jharia	Mangarda nallah	Down stream 1km of W4	Gungutta nallah proposed T/S	Gungutta nallah 1 km down from W6	Manjharia nallah	Jokki nallah	Hand pump Kudaridih
1	pH		6.9	7.0	7.0	7.2	7.0	7.1	7.0	7.1	6.8
2	Turbidity	NTU	65	68	66	70	68	71	63	81	3.4
3	Conductivity	µS/cm	42.9	43.8	44.3	44.1	46.8	45.9	80.2	51.8	104.5
4	Solid (Total)	mg/l	106	113	109	115	114	123	103	126	59
5	Solid (Dissolved)	mg/l	64	67	65	68	69	71	62	72	45
6	Solid (Suspended)	mg/l	42	46	44	47	45	52	41	54	14
7	Chloride as Cl	mg/l	8.5	8.2	8.9	8.2	9.2	8.5	8.2	8.9	8.2
8	Fluoride as F	mg/l	0.20	0.21	0.19	0.22	0.23	0.21	0.19	0.22	0.24
9	Total Hardness as CaCO ₃	mg/l	48	47	46	48	47	49	46	48	38
10	Calcium Hardness as CaCO ₃	mg/l	33	32	31	32	32	33	31	32	25
11	Magnesium Hardness as CaCO ₃	mg/l	15	15	15	16	15	16	15	16	13
12	Oil & Grease	mg/l	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces
13	B.O.D.	mg/l	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
14	C.O.D	mg/l	3	3	4	4	4	5	3	4	3
15	Sodium as Na	mg/l	0.73	0.74	0.69	0.70	0.72	0.70	0.63	0.68	0.64
16	Potassium as K	mg/l	0.32	0.35	0.33	0.34	0.32	0.33	0.34	0.32	0.28
17	Iron as Fe	mg/l	0.38	0.37	0.37	0.36	0.37	0.36	0.34	0.36	0.34
18	Silica as Si	mg/l	1.13	1.11	1.07	1.09	1.14	1.12	1.08	1.13	0.98
19	Zinc as Zn	mg/l	0.004	0.003	0.004	0.004	0.003	0.004	0.003	0.004	0.004
20	Manganese as Mn	mg/l	0.003	0.004	0.003	0.003	0.003	0.004	0.004	0.005	0.003
21	Nickel as Ni	mg/l	0.003	0.004	0.003	0.004	0.004	0.003	0.004	0.003	0.004
22	Chromium as Cr	mg/l	0.002	BDL	BDL	BDL	BDL	BDL	0.002	BDL	BDL
23	Lead as Pb	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

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Manager (QA)

R. & C. LABORATORY (BALCO, KORBA)
Environment Monitoring Section

REF : BALCO/QAP1/POLL/IMS 05/File-08B/MPT-WATER-1/JAN-18

DATE -17/01/2018

Water Analysis Report of Mainpat Mines.
Sampling Date - 11/01/2018

S.No.	Parameters	Units	W1	W2	W4	W5	W6	W7	W8	W9	W10
			Gungutta nallah Kesra	Gungutta nallah Pakri jharia	Mangarda nallah	Down stream 1km of W4	Gungutta nallah proposed T/S	Gungutta nallah 1 km down from W6	Manjharia nallah	Jokki nallah	Hand pump Kudaridih
1	pH		6.9	6.9	7.0	7.0	7.0	7.1	6.9	7.1	6.9
2	Turbidity	NTU	62	61	60	65	63	65	57	73	3.3
3	Conductivity	µS/cm	44.1	43.0	45.2	43.9	45.9	46.3	79.8	76.2	110.2
4	Solid (Total)	mg/l	105	107	103	115	109	117	99	119	62
5	Solid (Dissolved)	mg/l	65	64	62	69	64	71	59	66	50
6	Solid (Suspended)	mg/l	40	43	41	46	45	46	40	53	12
7	Chloride as Cl	mg/l	8.5	8.2	8.5	9.2	8.5	8.2	8.2	8.5	7.8
8	Fluoride as F	mg/l	0.15	0.17	0.19	0.19	0.17	0.21	0.17	0.21	0.21
9	Total Hardness as CaCO ₃	mg/l	47	46	45	47	45	47	47	49	43
10	Calcium Hardness as CaCO ₃	mg/l	30	31	30	31	31	33	32	32	29
11	Magnesium Hardness as CaCO ₃	mg/l	17	15	15	16	14	14	15	17	14
12	Oil & Grease	mg/l	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces
13	B.O.D.	mg/l	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
14	C.O.D	mg/l	3	3	4	4	4	3	4	3	4
15	Sodium as Na	mg/l	0.79	0.77	0.73	0.74	0.75	0.74	0.66	0.71	0.59
16	Potassium as K	mg/l	0.33	0.34	0.33	0.35	0.34	0.33	0.34	0.33	0.27
17	Iron as Fe	mg/l	0.45	0.39	0.41	0.39	0.41	0.39	0.39	0.39	0.39
18	Silica as Si	mg/l	1.11	1.15	1.08	1.09	1.15	1.08	1.13	1.17	0.91
19	Zinc as Zn	mg/l	0.004	0.003	0.004	0.004	0.004	0.005	0.004	0.004	0.004
20	Manganese as Mn	mg/l	0.004	0.004	0.003	0.004	0.003	0.004	0.003	0.004	0.003
21	Nickel as Ni	mg/l	0.003	0.003	0.004	0.005	0.004	0.005	0.004	0.005	0.004
22	Chromium as Cr	mg/l	0.002	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23	Lead as Pb	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

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R. & C. LABORATORY (BALCO, KORBA)
Environment Monitoring Section


REF : BALCO/QAP1/POLL/IMS 05/File-08B/MPT-WATER-1/FEB-18

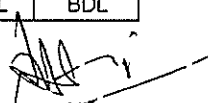
DATE -17/02/2018

Water Analysis Report of Mainpat Mines.
Sampling Date - 09/02/2018

S.No.	Parameters	Units	W1	W2	W4	W5	W6	W7	W8	W9	W10
			Gungutta nallah Kesra	Gungutta nallah Pakri jharla	Mangarda nallah	Down stream 1km of W4	Gungutta nallah proposed T/S	Gungutta nallah 1 km down from W6	Manjharla nallah	Jokki nallah	Hand pump Kudaridih
1	pH		6.8	6.7	6.8	6.7	6.8	6.8	6.7	6.9	6.7
2	Turbidity	NTU	45	58	43	39	49	51	33	50	4.2
3	Conductivity	µS/cm	38.3	33.6	29.7	36.5	36.9	37.6	26.5	41.5	96.3
4	Solid (Total)	mg/l	81	121	72	69	88	85	61	107	71
5	Solid (Dissolved)	mg/l	53	79	49	44	54	50	43	66	58
6	Solid (Suspended)	mg/l	28	42	23	25	34	35	18	41	13
7	Chloride as Cl	mg/l	7.8	7.1	6.7	7.1	7.1	7.8	6.7	7.8	8.5
8	Fluoride as F	mg/l	0.13	0.12	0.10	0.11	0.12	0.11	0.11	0.12	0.16
9	Total Hardness as CaCO ₃	mg/l	36	38	34	37	38	37	32	39	46
10	Calcium Hardness as CaCO ₃	mg/l	23	24	22	24	25	25	21	25	31
11	Magnesium Hardness as CaCO ₃	mg/l	13	14	12	13	13	12	11	14	15
12	Oil & Grease	mg/l	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces
13	B.O.D.	mg/l	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
14	C.O.D	mg/l	3	3	4	4	3	4	3	4	3
15	Sodium as Na	mg/l	0.69	0.71	0.66	0.68	0.71	0.72	0.65	0.73	0.63
16	Potassium as K	mg/l	0.27	0.29	0.28	0.30	0.32	0.33	0.27	0.33	0.32
17	Iron as Fe	mg/l	0.47	0.48	0.41	0.44	0.43	0.45	0.37	0.46	0.40
18	Silica as Si	mg/l	1.04	1.23	1.28	1.17	1.21	1.23	1.03	1.16	1.32
19	Zinc as Zn	mg/l	0.004	0.003	0.004	0.004	0.004	0.003	0.004	0.004	0.003
20	Manganese as Mn	mg/l	0.004	0.005	0.005	0.004	0.005	0.004	0.003	0.004	0.005
21	Nickel as Ni	mg/l	0.005	0.003	0.004	0.005	0.004	0.003	0.004	0.005	0.004
22	Chromium as Cr	mg/l	0.002	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23	Lead as Pb	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

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Manager (QA)

R. & C. LABORATORY (BALCO, KORBA)
Environment Monitoring Section

REF : BALCO/QAP1/POLL/IMS 05/File-08B/MPT-WATER-1/MAR-18

DATE- 16/03/2018

Water Analysis Report of Mainpat Mines
Sampling Date -06/03/2018

S.No.	Parameters	Units	W1	W2	W4	W5	W6	W7	W8	W9	W10
			Gungutta nallah Kesra	Gungutta nallah Pakri jharua	Mangarda nallah	Down stream 1km of W4	Gungutta nallah proposed T/S	Gungutta nallah 1 km down from W6	Manjharia nallah	Jokki nallah	Hand pump Kudaridih
1	pH		6.6	6.5	6.6	6.5	6.7	6.8	6.7	6.6	6.7
2	Turbidity	NTU	46	52	36	39	42	46	28	47	4.3
3	Conductivity	µS/cm	35.2	32.3	27.8	31.6	32.5	35.4	23.8	38.3	96.8
4	Solid (Total)	mg/l	76	112	67	69	74	80	55	106	78
5	Solid (Dissolved)	mg/l	51	73	47	48	50	52	40	67	63
6	Solid (Suspended)	mg/l	25	39	20	21	24	28	15	39	15
7	Chloride as Cl	mg/l	6.7	6.4	6.7	7.1	7.1	6.7	6.4	7.1	8.2
8	Fluoride as F	mg/l	0.10	0.08	0.07	0.07	0.08	0.08	0.07	0.08	0.12
9	Total Hardness as CaCO ₃	mg/l	31	33	32	33	32	32	30	35	46
10	Calcium Hardness as CaCO ₃	mg/l	20	21	21	22	22	21	20	23	31
11	Magnesium Hardness as CaCO ₃	mg/l	11	12	11	11	10	11	10	12	15
12	Oil & Grease	mg/l	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces	Traces
13	B.O.D.	mg/l	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
14	C.O.D	mg/l	3	3	4	3	3	4	3	4	3
15	Sodium as Na	mg/l	0.66	0.67	0.65	0.68	0.69	0.66	0.65	0.72	0.66
16	Potassium as K	mg/l	0.24	0.25	0.23	0.26	0.28	0.30	0.27	0.32	0.33
17	Iron as Fe	mg/l	0.46	0.44	0.40	0.43	0.42	0.44	0.41	0.45	0.43
18	Silica as Si	mg/l	1.01	1.16	1.29	1.24	1.25	1.29	1.08	1.19	1.30
19	Zinc as Zn	mg/l	0.004	0.005	0.004	0.004	0.004	0.005	0.004	0.004	0.003
20	Manganese as Mn	mg/l	0.004	0.003	0.005	0.004	0.005	0.004	0.003	0.004	0.005
21	Nickel as Ni	mg/l	0.005	0.004	0.004	0.005	0.004	0.005	0.004	0.005	0.004
22	Chromium as Cr	mg/l	0.004	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23	Lead as Pb	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

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Manager (QA)

Mitra S. K. Private Limited

Anmol Vihar, Srinagar,
Gudiyari Road,
Raipur - 492 009 (C.G.)
CIN : U51909WB1956PTC023037

T : 0771 - 4093265
E : raipur@mitrask.co.in



TEST REPORT

Name & Address of the Customer :
BHARAT ALUMINIUM COMPANY LIMITED
Plant II, P.O.- Balco Nagar,
Korba, Chattishgarh, India

Report No. : RPR-EDE/054
Date : 27.02.2017
Sample No. : 02/00092
Sample Description: Drinking Water
Sample Mark : DW 6, Balco Township Main Pal
Sample drawn on : 24.01.2017 at 04.00 pm

Reference No.& Date: 8500001182 , dtd- 10.11.2016

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Sulphates as SO ₄ in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2009	21.2
2.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2009	37.2
3.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 37)-1988 Rffm: 2009	<0.005
4.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 47)-1994 Rffm: 2009	<0.005
5.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 49)-1994 Rffm: 2009	0.03
6.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 42) - 1992 Rffm:2009	<0.02
7.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025 (Part 48)-1994 Rffm: 2009	<0.001
8.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 41)-1992 Rffm: 2009	<0.002
9.	Mineral Oil in mg/l	0.5	No Relaxation	IS 3025 (Part 39)-1991 Rffm: 2009	<0.01
10.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	<0.10
11.	Residual Free Chlorine in mg/l	0.2	1.0	IS 3025 (Part 26)- 1986 Rffm:2009	<0.10
12.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2009	0.22
13.	Chloride as Cl	250	1000	IS 3025 (Part 32)-1988 Rffm: 2009	38.4
14.	Total Alkalinity as CaCO ₃ in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	144
15.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 55)- RA-2009	<0.01

Report Prepared by:



for Mitra S. K. Private Limited

Authorized Signatory

Contd. To Page-2

ANNEXURE 3

YEAR	No of Saplings Planted
1993-1994	0
1994-1995	6151
1995-1996	10500
1996-1997	16263
1997-1998	31556
1998-1999	30000
1999-2000	0
2000-2001	21850
2001-2002	0
2002-2003	45000
2003 -2004	34500
2004-2005	21094
2005-2006	30000
2006-2007	108500
2007-2008	100000
2008-2009	119000
2009-2010	85000
2010-2011	110000
2011-2012	100000
2012-2013	130000
2013-2014	60000
2014-2015	60000
2015-2016	15000
2016 - 2017	15000
2017-2018	5000



Central Ground Water Authority
Ministry of Water Resources
Government of India

No. 21-4(119)/NCCR/CGWA/2011- 1827

Dated-

4 DEC 2011

To,
M/s Bharat Aluminium Corporation Ltd.
Mines Department, Engineering Building,
Plant - 1, BALCO
Korba 495684, Chhattisgarh.

Sub: Request for Ground Water clearance in respect of M/s Bharat Aluminium Corporation Ltd., for the proposed expansion of Bauxite mining at village Mainpat, Block & Tehsil Mainpat, District Surguja, Chhattisgarh -reg.

Sir,

The area where the project falls comes under safe category as per the ground water assessment carried out by Central Ground Water Board. Since the total requirement of ground water is 17 m³/day, NOC is not required for ground water withdrawal from Central Ground Water Authority. However, to neutralize the adverse impact of ground water withdrawal that may arise on a long term basis, the industry/ project is advised to undertake the following measures:

1. Ground Water withdrawal shall not exceed the proposed quantity of 17 m³/day.
2. All abstraction structures should be fitted with water meter by the industry and monitoring of ground water abstraction to be undertaken accordingly on regular basis, at least once in a month. The data may be submitted on a yearly basis to the Regional Director, Central Ground Water Board, North Central Chhattisgarh Region, Raipur for perusal and records.
3. The industry should adopt and implement artificial recharge measures/rain water harvesting measures for augmenting the ground water resources of the area as per the hydrogeological investigation.
4. The industry shall ensure proper conservation measures, recycling and reuse of waste water after adequate treatment.
5. The industry shall monitor the ambient ground water regime of the area through piezometers and submit the data on a yearly basis to the Regional Director, Central Ground Water Board, North Central Chhattisgarh Region, Raipur for perusal and records.

Yours faithfully,


Regional Director

Copy for information to the:

1. Member Secretary, Chhattisgarh Environment Conservation Board 1-Talak Nagar Shiv Mandli Chowk, Main Road, Awanti Vihar, Raipur-492006, Chhattisgarh, with a request to ensure that Rain Water Harvesting and Artificial Recharge methods are being implemented by the firm and quantity of withdrawal is not exceeding 17 m³/day.
2. Regional Director, Central Ground Water Board, North Central Chhattisgarh Region, Reena Apartments, 2nd Floor, Panchpedi Naka, Raipur 492001, Chhattisgarh. This has reference to your letter No. 35 1/NCCR/Vol VII 1456 dated 25 11 2011
3. TS to Chairman, Central Ground Water Board, NH-IV, Faridabad.

Regional Director

Annexure - V

R. & C. LABORATORY (BALCO, KORBA)

Environment Monitoring Section

REF : BALCO/QAP1/POLL/IMS 05/File-08B/MPT-AIR-1/Oct-17

DATE -18/10/2017

Ambient Air Quality Report of Mainpat Bauxite mines

Sampling Date . 03 to 06 October 2017

SN	Parameters	Unit	Norms	Near Balco T/S	Old Kesra	Camp No-2	Office
				03/10/2017	04/10/2017	05/10/2017	06/10/2017
1	PM 2.5	µg/m ³	40(Annual) & 60(24 hrs)	25	22	29	32
2	PM 10	µg/m ³	60(Annual)&100(24 hrs)	47	43	53	52
3	SO ₂	µg/m ³	50(Annual)&80(24 hrs)	18	17	19	16
4	NO _x	µg/m ³	40(Annual)&80(24 hrs)	15	14	14	16
5	Sound level (Day)	dB	75	46.2	44.7	49.3	44.9
6	Sound level (Night)	dB	70	45.1	43.2	48.0	43.5

Norms-National Ambient Air Quality Standards (18 November 2009)

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Approved by
Manager (QA)

R. & C. LABORATORY (BALCO, KORBA)

Environment Monitoring Section

REF : BALCO/QAP1/POLL/IMS 05/File-08B/MPT-AIR-1/Nov-17

DATE - 18/11/2017

Ambient Air Quality Report of Mainpat Bauxite mines

Sampling Date : 08 to 11 November 2017

SN	Parameters	Unit	Norms	Near Balco T/S	Old Kesra	Camp No-2	Office
				08/11/2017	10/11/2017	09/11/2017	11/11/2017
1	PM 2.5	µg/m ³	40(Annual) & 60(24 hrs)	27	26	31	35
2	PM 10	µg/m ³	60(Annual)&100(24 hrs)	48	46	54	56
3	SO ₂	µg/m ³	50(Annual)&80(24 hrs)	16	17	17	19
4	NO _x	µg/m ³	40(Annual)&80(24 hrs)	13	14	15	15
5	Sound level (Day)	dB	75	47.1	45.7	48.1	45.3
6	Sound level (Night)	dB	70	46.2	44.8	47.6	44.3

Norms-National Ambient Air Quality Standards (18 November 2009)

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R. & C. LABORATORY (BALCO, KORBA)

Environment Monitoring Section

REF : BALCO/QAP1/POLL/IMS 05/File-08B/MPT-AIR-1/DEC-17

DATE - 18/12/2017

Ambient Air Quality Report of Mainpat Bauxite mines

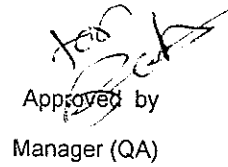
Sampling Date : 08 to 11 December 2017

SN	Parameters	Unit	Norms	Near Balco T/S	Old Kesra	Camp No-2	Office
				08/12/2017	10/12/2017	09/12/2017	11/12/2017
1	PM 2.5	µg/m ³	40(Annual), & 60(24 hrs)	29	31	32	35
2	PM 10	µg/m ³	60(Annual)&100(24 hrs)	50	51	53	54
3	SO ₂	µg/m ³	50(Annual)&80(24 hrs)	16	15	16	16
4	NO _x	µg/m ³	40(Annual)&80(24 hrs)	14	14	13	15
5	Sound level (Day)	dB	75	47.5	45.7	51.3	55.1
6	Sound level (Night)	dB	70	45.5	43.3	49.7	53.2

Norms-National Ambient Air Quality Standards (18 November 2009)

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Analysed by


Approved by
Manager (QA)

R. & C. LABORATORY (BALCO, KORBA)

Environment Monitoring Section

REF : BALCO/QAP1/POLL/IMS 05/File-08B/MPT-AIR-1/JAN-18

DATE - 17/01/2018

Ambient Air Quality Report of Mainpat Bauxite mines

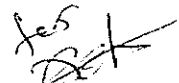
Sampling Date : 08 to 11 Jan 2018

SN	Parameters	Unit	Norms	Near Balco T/S	Old Kesra	Camp No-2	Office
				08/01/2018	10/01/2018	09/01/2018	11/01/2018
1	PM 2.5	µg/m ³	40(Annual) & 60(24 hrs)	33	31	36	37
2	PM 10	µg/m ³	60(Annual) & 100(24 hrs)	55	51	58	60
3	SO ₂	µg/m ³	50(Annual) & 80(24 hrs)	16	15	16	16
4	NO _x	µg/m ³	40(Annual) & 80(24 hrs)	14	14	15	13
5	Sound level (Day)	dB	75	46.8	46.2	52.5	55.3
6	Sound level (Night)	dB	70	45.1	43.5	49.0	52.0

Norms-National Ambient Air Quality Standards (18 November 2009)

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R. & C. LABORATORY (BALCO, KORBA)

Environment Monitoring Section

REF : BALCO/QAP1/POLL/IMS 05/File-08B/MPT-AIR-1/FEB-18

DATE - 11/02/2018

Ambient Air Quality Report of Mainpat Bauxite mines

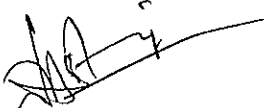
Sampling Date . 05 to 08 Feb 2018

SN	Parameters	Unit	Norms	Near Balco	Old Kesra	Camp No-2	Office
				T/S	08/02/2018	06/02/2018	07/02/2018
1	PM 2.5	µg/m ³	40(Annual) & 60(24 hrs)	32	29	35	38
2	PM 10	µg/m ³	60(Annual) & 100(24 hrs)	56	53	58	60
3	SO ₂	µg/m ³	50(Annual) & 80(24 hrs)	18	16	18	17
4	NO _x	µg/m ³	40(Annual) & 80(24 hrs)	16	14	15	16
5	Sound level (Day)	dB	75	44.9	44.5	52.3	55.2
6	Sound level (Night)	dB	70	43.9	43.6	47.4	51.5

Norms-National Ambient Air Quality Standards (18 November 2009)

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Manager (QA)

R. & C. LABORATORY (BALCO, KORBA)

Environment Monitoring Section

REF : BALCO/QAP1/POLL/IMS 05/File-08B/MPT-AIR-1/MAR-18

DATE - 16/03/2018

Ambient Air Quality Report of Mainpat Bauxite mines

Sampling Date :03 to 06 Mar 2018

SN	Parameters	Unit	Norms	Near Balco T/S	Old Kesra	Camp No-2	Office
				03/03/2018	04/03/2018	05/03/2018	06/03/2018
1	PM 2.5	µg/m ³	40(Annual) & 60(24 hrs)	30	25	34	36
2	PM 10	µg/m ³	60(Annual) & 100(24 hrs)	52	51	59	57
3	SO ₂	µg/m ³	50(Annual) & 80(24 hrs)	18	15	16	18
4	NO _x	µg/m ³	40(Annual) & 80(24 hrs)	15	13	14	15
5	Sound level (Day)	dB	75	44.6	44.5	52.6	54.7
6	Sound level (Night)	dB	70	43.4	43.7	46.8	51.0

Norms-National Ambient Air Quality Standards (18 November 2009)

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ANNEXURE 6

भारत एल्युमिनियम कम्पनी लिमिटेड
कोरबा, छत्तीसगढ़

सर्वसाधारण को सूचित किया जाता है कि पर्यावरण एवं वन मंत्रालय, भारत सरकार द्वारा भारत एल्युमिनियम कम्पनी लिमिटेड (बालको) की मैंगनीट बाक्ससाइट खदान की उखनन क्षमता 0.75 मिलियन टन प्रति वर्ष के लिए प्रदत्त पर्यावरण स्वीकृति की वैधता तीस अक्टोबर, जुलाई 8, 2012 तक बढ़ा दी गई है. अनुमति पत्र क्रमांक जे-11015/235/2007-आई ए. II (एम) दिनांक अक्टूबर 26, 2010 को प्रति छत्तीसगढ़ पर्यावरण संरक्षण मंडल और पर्यावरण एवं वन मंत्रालय की वेबसाइट <http://envfor.nic.in> में उपलब्ध है.

कृते भारत एल्युमिनियम कम्पनी लिमिटेड
कोरबा, छत्तीसगढ़

नव भारत खिल्लासपुर
31/10/10 कोरबा पृष्ठ 3.

Bharat Aluminium Co. Ltd.
Korba, Chhattisgarh

PUBLIC NOTICE

This is to inform the general public that Ministry of Environment and Forests (MOEF) Govt. of India has Extended the validity of the Environmental Clearance for Mainpat Bauxite Mine of Bharat Aluminium Company Limited (BALCO) for Production Capacity 0.75 MTPA up to lease period of the mine i.e. upto 8th July 2012. A copy of the clearance letter no. J-11015/235/2007 IA-II (M) dt. October 26, 2010 is available with Chhattisgarh Environment Conservation Board and also at website of MOEF <http://envfor.nic.in>.

For Bharat Aluminium Co. Ltd.
Korba, Chhattisgarh

Central Chronicle Raipur
31/10/10 Pg. 4.