ADITYA BIRLA
UTKAL ALUMINA

UAIL /ENV/2015-16/116

25.05. 2016

To

The Addl. Principle Chief Conservator of Forest (C)
MoEF & Climate Change, Govt. of India
Eastern Regional Office
A/3, Chandrasekhar
Bhubaneswar 751023.

Subject: Six monthly compliance status of conditions imposed in Environment Clearance for 1 MTPA Refinery & 50 MW Co- Generation Power Plant Expansion of Alumina Refinery (1 MPTA to 3 MTPA) along with Co-Generation Power Plant (50 MW to 90 MW) & 8.5 MTPA Bauxite mines.

Dear Sir,

We are enclosing herewith six monthly compliance status of the conditions imposed in the Environmental Clearance for the period from 1st October 2015 to 31st March 2016 with respect to our following projects.

1. 1.0 MTPA Refinery & 50 MW Co- generation power plant vide Ministry's letter no. J-11011/76/94-IA.II (I) dated 27.09.95 & Expansion of Alumina Refinery (1 to 3 MTPA) and Co- Generation Power Plant (50MW to 90 MW) vide Ministry's letter no. J-11011/753/2007-IA II (I) dated 29.01.2008.

2. 8.5 MTPA Bauxite mines vide Ministry's letter no. J-11015/650/2007-IA.II(M) dated 19.02.09,

This is for your kind information please,

Thanking you,

Yours faithfully,

For Utkal Alumina International Ltd.

(N.Nagesh)
Joint President

Encl: As above.

CC: Member Secretary, OSPCB, Bhubaneswar
CC: Regional Office, CPCB, Kolkota
CC: Regional Officer, OSPCB, Rayagada

Compliance status of conditions imposed in Environmental Clearance for 1.0 MTPA Refinery & 50 MW co-generation Power Plant Vide letter No. J-11011/76/94-IA.II (I), dated 27.09.95

Project Name : UTKAL ALUMINA INTERNATIONAL LTD.
Period of Compliance : October 2015 to March 2016.

Sl. No.	Imposed Condition	Compliance Status
I	The project authorities must strictly adhere the stipulations laid down by the State Pollution Control Board and the State Govt.	Agreed.
II	Any expansion of the plant, either with the existing product mix or new products can be taken up only with the prior approval of this Ministry.	Approval has been obtained from the Ministry vide letter no F.NO. J-11011/753/2007 IA II(I),dated.29.01.2008 for the capacity expansion from 1 MTPA to 3 MTPA Refinery & from 50 MW to 90 MW co-generation Power Plant.
III	The gaseous and particulate emissions from various process units should conform to MINAS or standards prescribed by the concerned authorities, from time to time. At no time the emissions level should go beyond the stipulated standards. In the event of failure of any pollution control system adopted by the unit, the respective unit should be put out of operation immediately and should not be restarted until the control measures are rectified to achieve the desired efficiency.	Pollution control devices such as ESPs, bag filters, wet scrubbers, dry fog system and water spraying systems are installed at different process units to keep the emission level under control as per the norms of MoEF / CPCB/ SPCB. As suggested, in case of failure of any pollution control system the respective unit will be kept out of operation till restoration of pollution control devices.
IV	At least four ambient air quality monitoring stations should be set up in the down wind direction as well as where maximum ground level concentration is anticipated in consultation with the State Pollution Control Boarl. Monitoring network should be designed taking into account land use pattern, location of stacks, meteorological and topographic features including the results of existing monitored data. Stacks of the plant must be provided with automatic stack emission monitoring equipment. Stack emissions and ambient air quality data should be submitted to the State Pollution Control Board once in three months and to this Ministry once in six months, along with statistical analysis and interpretation.	Ambient air quality is being monitored by establishing seven nos. of stations considering pre-dominant wind direction and maximum ground level concentration in consultation with OSPCB. The monitored data is being submitted to Ministry including its Regional Office at Bhubaneswar and OSPCB once in six months. The monitored results during the period October 2015 to March 2016 are enclosed as **ANNEXURE- I.** On-line monitoring system in all the stacks of CPP and Calciners of Refinery have been installed. The monitored data is being submitted to the State Pollution Control Board and to the Ministry's Regional Office at Bhubaneswar and CPCB once in six months. The monitored results during the period October 2015 to

		March 2016 is enclosed as **ANNEXURE-II.**
V	There should not be any change in the stack design without the prior approval of the State Pollution Control Board.	Agreed
VI	Liquid effluent should be properly treated and the treated effluent conforming to the prescribed standards should be utilized for green belt development to the maximum extent possible.	The plant operates on a Zero Discharge philosophy. All the process effluents are alkaline in nature and collected in caustic pond through a dedicated RCC drainage system. All this process water is fully recycled and used in the process there by reducing fresh water consumption. Domestic waste water of plant is being treated in STP and the treated water is being used for green belt development.
VII	Adequate number of influent and effluent monitoring stations should be setup in consultation with the State Pollution Control Board. If the effluent quality at any time, exceeds the standards prescribed, the corresponding units of the plant which are contributing to the excessive pollution load shall be immediately stopped from the operation till the quality of pollutants discharged from the units are brought down to the required levels.	Monitoring of influent and effluent is being carried by installing stations at various locations. As the plant operates on Zero Discharge philosophy, all the process effluents are collected and recycled back to the process. Hence, monitoring is done only for storm water in consultation with OSPCB at the discharge location.
VIII	Effluents from fly ash and red mud ponds should be treated and recycled to the maximum possible extent. Adequate number of wells around these ponds should be dug for ground water quality monitoring.	Provision is made to collect the supernatant water of red mud pond through decant wells and recycled in process and provision is made to reuse the waste water of ash pond in the same process. Ground water quality around the said ponds are being monitored and the same is attached herewith as **ANNEXURE- III.**
IX	The project authorities should ensure that villages located around the plant within 10km radius should have no pollution problem due to operation of the plant and other related activities.	Provision is made to control all pollution sources by installing modern pollution control devices and management systems. Moreover, strict monitoring and precautionary measures are being taken to avoid such situations.
X	Solid waste disposal sites (red mud, ETP sludge, fly ash etc.) should be made impervious to avoid ground water contamination. These sites should have the approval of the State Pollution Control Board.	Solid waste disposal sites like red mud pond and fly ash pond are made impervious by providing clay & 1.5 mm HDPE lining to avoid ground water contamination. The design and drawing of both the ponds have been approved by State Pollution Control Board vide their Letter No. 19306/IND-IV-HW-931 dated 30.08.2012.
XI	Hazardous substances and wastes should be handled as per the	Hazardous wastes such as used oil, cotton wastes of workshop etc. are

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	Hazardous wastes (Management and Handling) Rules, 1989 of the EPA, 1986.	being collected and handled as per the Hazardous wastes (Management and Handling) Rules, 1989 of the EPA, 1986.
XII	Fugitive emissions of dust / mists, vapours, fumes etc. should be controlled and in-plant monitoring of contaminants should be done regularly.	Bag filters, wet scrubbers, dry fog system and water sprinkling systems are installed at suitable locations to control fugitive emissions of dust / mists, vapours, fumes etc. and monitoring of fugitive emission is being carried out regularly.
XIII	A workable plan for fly ash and red mud utilization should be prepared and submitted to this Ministry for approval. At least 25% of solid wastes should be utilized in the first year of the commissioning of the plant and thereby increasing by 10% every year so that by the end of the 9th year full utilization may take place.	Presently fly ash is being used to fill low lying areas with in plant premises, dyke height increase, road making and supply to brick manufacturing units. Current utilization is around 31% of total generation. The plant is situated at a remote place. There are only two fly ash brick manufacturing units around 20 km radius the plant and no cement industry exist within 150 km radius of the plant. However, we are exploring various avenues for utilization of fly ash and red mud in the coming years.
XIV	Lay out map (refinery complex, township and hill slopes) indicating : (a) area where plantation has already been done, rate of survival, total number of trees existing and measurement in hectare: (b) area to be covered under plantation: and (c) additional area under the control of industry which is not being used for any activity should be submitted to this Ministry by August, 1995 along with details on year –wise future green belt development plan, amount earmarked for the same and nurseries developed to be developed to cater the needs of such activities.	The lay out map showing plantation already taken up and to be taken up in future in different project area has been submitted vide our letter No. UAIL/ENV2012-13/43 dt17.11.2012.
XV	A study should be carried out to assess whether the local environment can assimilate satisfactorily the gaseous emissions and the liquid and solid discharges from the plant. The scope of study should be finalised in consultation with the state Pollution Control Board, Central Pollution Board, and this Ministry and the report be made available by June, 1996.	EIL was engaged to carry out this work on 3rd May 2000. The scope of study was finalized in consultation with the state Pollution Control Board, Central Pollution Board, and MoEF. The study was carried out by engaging three renowned agencies: 1. Indira Gandhi Institute of Devp. Research for Socio-economic study, (IGIDR), Mumbai, 2. Salim Ali Centre for Ornithology and Natural History (SACON), Coimbatore, for Biological environment study and 3. Engineers India Limited (EIL), Delhi, for the balance study and for

		coordinating and compilation of the study. The final report was received on 24th May 2002 and submitted to MoEF in Aug 2002.
XVI	Investorisation of pollution sources and loads in terms of liquid, gases and solid wastes should be carried out and report submitted to State Pollution Control Board/ Ministry of Environment and Forests once in six months regularly.	Complied.
XVII	Biological monitoring of flora must be started within and in the vicinity of the plant. A study on impact on vegetation due to emissions of pollutants should be carried and report submitted to this Ministry.	The result of biological monitoring of flora within and in the vicinity of the plant area has been submitted vide our letter No. UAIL/ENV/2012-13/43 dated 17.11.2012.
XVIII	The proposed acquisition of land for the entire facilities is very much on the higher side and has to be reduced based on actual requirement of land for plant, township, and other facilities including green belt. A revised lay out and land estimate should be submitted to this Ministry by October, 1995.	The expansion of the project accorded vide letter no J-11011/753/2007-IA II (I), dated 29.01.2008 does not require any additional land.
XIX	A copy of Rehabilitation plan for the families to be shifted from the nearby villages should be provided by Oct'1995.	The same has been submitted vide our letter No. UAIL/ENV/2012-13/43 dated 17.11.2012.
XX	Feasibility of using low sulphur fuel other than oil in the Calciner be explored and report submitted to this Ministry by October, 1995.	The low sulphur fuel oil as provided by HPCL/IOCL is being used in the Calciners.
XXI	The project authorities must ensure regular medical examination for occupational diseases.	1. Pre-employment Health check-up is being carried out for all the employees at the time of joining. 2. As per The Factories Act – 1948 periodical Health check-up is being carried on regular intervals for all the employees and records are maintained.
XXII	The project authority should set up laboratory facilities for collection and analysis of samples under the supervision of competent technical personnel who will directly report to the Chief Executive.	Presently monitoring of all required environmental parameters is being carried out by engaging MoEF recognized laboratory under the supervision of competent technical personnel.
XXIII	A separate Environment Management Cell with suitably qualified people to carry out various functions should be set up under the control of Sr. Executive, who will report directly to the Head of organization.	An independent environment management cell with qualified personnel has been established for monitoring of environmental parameters and implementation of effective control measures.

XXIV	The funds earmarked for the environmental protection measures should not be diverted for other purposes and year-wise expenditure should be reported to this Ministry.	The funds earmarked has been utilized in implementation of conditions laid down for protection of environment without diverting for any other purpose. The expenditure incurred during the financial year 2015-16 was Rs. 5.20 crores and the details of for the same is attached as **ANNEXURE- IV.**
XXV	The project authorities must obtain forestry clearance as required under the Forest (Conservation) Act, 1980.	Earlier forest clearance under F.C.Act 102.0 ha of forest land has already been obtained vide letter (No.8-43/96-FC) dated 19 April 1999 and for additional forest land 2.335 ha has been obtained vide letter No. 8-43/1996-FC(pt) dated 26.09.2014.
XXVI	A plan should be prepared for implementation in consultation with the state Department of Environment to reduce siltation of Indravati river.	A study on controlling siltation of Indravati River on account of the Project activities has already been carried out by CWPRS, Pune, and M/s GMS Power packs, Bhubaneswar. All the measures identified therein implemented.
XXVII	A green belt all around the plant and ash dump / red mud disposal area should be raised by selecting local species. At least 1500 plants per hectare should be planted.	Greenbelt around plant premises, railway corridor, red mud pond, ash pond, infrastructural areas have been developed by planting in 317 hectares of land up to the year 2015. The same will be continued in coming years also.

STATUS OF CONDITIONS IMPOSED IN ENVIRONMENTAL CLEARANCE FOR 3 MTPA REFINERY & 3X30 MW CO-GENERATION POWER PLANT VIDE LETTER NO. J-11011/753/2007-IA II (I), DATED 29.01.2008.

Project Name : **UTKAL ALUMINA INTERNATIONAL LTD.**
Period of Compliance : **October 2015 to March 2016.**

<table>
<tr><th>Sl. No.</th><th>Imposed Conditions</th><th>Compliance Status</th></tr>
<tr><td colspan="3">A.SPECIFIC CONDITIONS:</td></tr>
<tr><td>1</td><td>Adequate air pollution control measures shall be provided to control particulate matter Emissions within 50 mg/Nm^3. On-line monitoring of particulate matter shall be carried out and reports submitted to the Ministry's Regional Office at Bhubaneswar, CPCB and OSPCB. The height of the stacks shall be as per the CPCB guidelines.</td><td>The following air pollution control devices have been installed at suitable locations.
<table>
<tr><th>Sl No.</th><th>Location</th><th>Control Device Details</th></tr>
<tr><td>1</td><td>Power plant (Boilers- 1,2,3)</td><td>ESP attached to each boiler & connected to the 150 meter height multi-flue-stack.</td></tr>
<tr><td>2</td><td>Calcination plant(A & B)</td><td>ESP attached to each Calciner & connected to 136 meter height stack.</td></tr>
</table></td></tr>
<tr><td>2</td><td>The company shall install electrostatic precipitator (ESP) to power boilers to control emissions within 50 mg/Nm^3.The emissions shall conform to the standards prescribed by the Ministry/CPCB/OSPCB whichever is more stringent. Fugitive emission from red mud disposal area shall be controlled by mud stacking and water sprinkling. Bag filters with dust collectors shall be provided to Alumina loading area, bauxite crushing area, coal & ash handling areas and lime handling area to control the particulate emissions. Dust suppression and dry fog system shall be provided in Bauxite and coal handling areas. Garland drain shall be created at red mud and fly ash disposal areas.</td><td>Electrostatic precipitator (ESPs) designed to control particulate matter emissions within 50 mg/Nm^3 and connected to boilers of CPP with online monitoring system.
The following provisions have been made to control fugitive emission:
a. Mud slurry (60:40 ratio) is being disposed following the HCSD technology, the discharge points are changed regularly to various locations of the red mud disposal area to keep the mud wet.
b. Bag filters at alumina loading area, coal crusher, bauxite crusher, ash handling area have been provided. Water spraying at Bauxite/coal handling area and dry fog system at coal unloading area have been provided.
c. Wet scrubber at lime handling area.

Garland drains around red mud pond and fly ash disposal area have been provided.</td></tr>
<tr><td>3</td><td>The poly-aromatic hydrocarbons (PAH) shall be monitored quarterly & report is to be submitted regularly to the Ministry and its Regional Office at Bhubaneswar/CPCB/ OSPCB.</td><td>The monitored results of PAH is enclosed herewith as ANNEXURE-II.</td></tr>
<tr><td>4</td><td>Total water requirement from San River (Upstream of Indravati Reservoir) shall not exceed 22,330 m^3/day as per the permission accorded by the Department of Water Resources, Govt. of Orissa. The wastewater shall be treated in ETP and reused in the process. 'Zero' discharge shall be adopted. Multi-effect evaporators shall be installed to recover water and recycle for process consumption to reduce the fresh consumption. The domestic wastewater shall be treated in</td><td>Presently the water requirement has not exceeded 20,000 m3/day. The supernatant water of red mud pond, wash out of caustic handling area is being collected and reused in the process. The scrubbed liquor of lime handling plant is being completely re-utilized in the same process. All provisions have been made to reuse the supernatant water of ash pond in the same ash slurry making process. Multi-effect evaporators are put into operation to recover and reuse the water. STP is in operation to treat domestic wastewater and the treated water is being</td></tr>
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	the Sewage Treatment Plant (STP) and treated wastewater conforming to the standards for land application shall be reused for green belt development.	reused for green belt development.
5	Red mud, sand scales and lime grit shall be disposed-off in red mud disposal area. Red mud disposal shall be done as per the CPCB guidelines. HDPE lining shall be provided to avoid any leakage to the ground. Leachate collection facilities shall be provided to the secured landfill facility (SLF). Proper care shall be taken to ensure no run off or seepage from the red mud disposal site to natural drainage. The location and design of the landfill site shall be approved by the OSPCB as per Hazardous Wastes (Management and Handling) Rules, 2003. Efforts shall also be made to find out productive uses of red mud in brick and ceramic products etc. STP sludge shall be utilized as manure for green belt development. All the used oil and batteries shall be sold to the authorized recyclers/reprocessors.	Red mud, sand scales and lime grit are being disposed-off to red mud pond. Red mud is being disposed-off using High Concentration Slurry Disposal (HCSD) technology. HDPE lining has been provided in red mud pond. Leachate of the red mud pond is collected in a HDPE lined facility and the same is recycled to the process. Red mud pond has been constructed as per the design and drawing approved by State Pollution Control Board vide their Letter No. 19306/IND-IV-HW-931 dated 30.08.2012. The red mud pond is lined with clay & 1.5 mm HDPE liner with sub-soil drainage collection & reuse system, run-off drainage network and leachate collection facility. Red mud samples have been sent to various research laboratories like IMMT, ACC for its productive utilization. STP sludge is being used as manure for plantation. Used oil and batteries are being sold to authorized recyclers/reprocessors.
6	Regular ground water monitoring shall be carried out all around the fly ash and red mud disposal area by installing Piezometers in consultation with the OSPCB /SGWB /CGWB and data submitted to the Ministry' Regional Office and OSPCB.	Monitoring of ground water in existing wells/ Piezometers around red mud & ash pond area is being carried out in each season and the monitored data is enclosed as **ANNEXURE- III.**
7	Fly ash shall be utilized as per Fly Ash Notification, 1999 and as amended in 2003. The industry shall also take steps to utilize ash to maximum extent by itself and shall provide all facilities to others potential users viz cement and brick manufacturers.	Presently fly ash is being used to fill low lying areas with in plant premises, dyke height increase, road making and supply to brick manufacturing units. Current utilization is around 31% of total generation. The plant is situated at a remote place. There are only two fly ash brick manufacturing units around 20 km radius the plant and no cement industry exist within 150 km radius of the plant. However, we are exploring various avenues for utilization of fly ash in the coming years.
8	Green belt of adequate width and density around the project site shall be developed in 338 ha. out of total 1015.3 ha. (33 %) in consultation with the DFO as per the CPCB guidelines.	As on date, green belt have been developed by planting around 7.5 lac nos. of saplings over an area of 317 ha out of the targeted 338 ha, within plant premises, outside the plant, red mud pond area, ash pond area, railway corridor etc. The same program will be continued.
9	Prior permission and recommendations of the State Forest Department regarding impact of the proposed expansion of the Alumina Refinery on the Sirigurha R.F. (8.8 km. N), Balia Kharha R.F. (6.4 Km., ENE), Masimandi PF (2.5 km, S), Leliguma R.F. (9 km. ENE), Titigurha RF (10 Km, ESE) shall be obtained and recommendations suggested, if any, shall be implemented.	As per the EIA/EMP no major impact of the expansion was envisaged on the said R.Fs. However, funds have been deposited to CAMPA fund under FC Act for taking care of the impacts on Flora and Fauna.
10	All the environmental conditions stipulated for the existing Alumina Refinery Plant (1.0	Agreed. Separate six monthly compliance report for the same has been submitted to the Regional Office

	MTPA) mentioned in the environment clearance letter accorded by the Ministry vide letter no. J-11011/76/94-IA-II(I) dated 27th September, 1995 shall be implemented satisfactorily in a time bound manner.	of the Ministry.
11	This environmental clearance is subject to the outcome of the Court Case in W.P. No. 5697 of 2007 (Prafulla Samantray vs. Union of India and Others) pending in the Hon'ble High Court of Orissa	The matter is pending before the Hon'ble High Court of Orissa. The details of the case have already been submitted vide our letter No. UAIL/ENV/2014-15/56 dated 17.02.2015.
B. GENERAL CONDITIONS		
1	The project authorities must strictly adhere to the stipulations made by the Orissa State Pollution Control Board (OSPCB) and the State Government	All the conditions stipulated by the State Pollution Control Board, Orissa are being effectively implemented.
2	No expansion or modification in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	Agreed
3	The gaseous emissions from various process units shall conform to the standards prescribed by the concerned authorities from time to time. The OSPCB may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location. At no time the emissions level shall go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.	Agreed. Gaseous emissions are being monitored online on continuous basis and the reports are being submitted to Regional office of the Ministry. No deviations from the prescribed standards have been observed so far.
4	Adequate number of ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, $S0_2$ and NO_X are anticipated in consultation with the OSPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and OSPCB once in six months.	Ambient air quality is being monitored by establishing seven nos. of AAQ stations considering pre-dominant wind direction and maximum ground level concentration in consultation with SPCB. The monitored data is being submitted to Ministry including its Regional Office at Bhubaneswar and OSPCB once in six months. The monitored results for the period October 15 to March 2016 are enclosed as **ANNEXURE- I.**
5	In-plant control measures for checking fugitive emissions from spillage/raw materials handling etc. shall be provided and particulate matter from Bauxite transport and crushing shall be provided with highly efficient bag filters and covered conveyers and adequate water sprinkling shall be done.	Provision is made to control fugitive emission at Bauxite crushing, handling area by bag filters, dry fog system, covered conveyors and spillage collection/water spraying on roads.
6	Industrial wastewater should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended form time to time. The treated wastewater shall be recycled in the plant as well as utilization for plantation purposes.	1. The supernatant water of red mud pond is being collected through decant wells and reused in process. 2. The spills and other caustic bearing process liquids are routed to the respective area sumps and recycled back to process. 3. The storm water drainage network is connected to guard pond and reused in the process. 4. The scrubbed liquor of lime handling plant is

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		being completely re- utilized in the same process. 5. Provision is made to collect and reuse the discharge water of ash pond in the same process and reuse of the domestic waste water in gardening and afforestation purposes after treatment.
7	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management and Handling) Rules, 2003. Authorization from the OSPCB must be obtained for collection, storage, treatment and disposal of hazardous wastes.	Hazardous wastes such as used oil, cotton wastes of workshop etc. is being collected and handled as per the Hazardous wastes (Management and Handling) Rules, 1989 of the EPA, 1986. Application for Hazardous waste authorization has been submitted to OSPCB and the same is awaited.
8	The overall noise levels in and around the plant area shall be kept well within the standards (85 dB A) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under EPA Rules, 1989 viz. 75 dB A (daytime) and 70 dB A (nighttime).	The design of installed equipment includes the noise control devices like acoustic hoods, silencers, enclosures etc. The overall noise level is well within (85 dB A) and the ambient noise levels within 75 dB A (daytime) and 70 dB A (nighttime). The monitored results of noise levels during the period October 15 to March 2016 is enclosed as **ANNEXURE- V.**
9	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.	1. Pre-employment Health check-up is being carried out for all the employees at the time of joining. 2. As per The Factories Act – 1948 periodical Health check-up is being carried on regular intervals for all the employees and records are maintained.
10	The company shall develop rainwater structures to harvest the run-off water for recharge of ground water in consultation with the Central Ground Water Authority/Board.	A network of drainage system having a length of 17 km of size 1m Depth × 1m Width has been provided to collect rain water and diverted to 3 nos. of pond of capacity 13,243 m^3 (Dimension: Ø 71.5m X depth 3.3m), 25, 905 m^3 (Dimension: Ø 100 m X 3.3m depth) and 10,000 M^3 constructed at different levels for complete recirculation in process avoiding the usage of fresh water. Ground water recharge is not possible inside the plant due to alkaline process. Provision will be made to harvest rain water through recharge wells and trenches for ground water recharge in township.
11	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Aluminum sector shall be strictly implemented.	As per CREP for aluminium industry, red mud is being disposed to red mud pond through HCSD technology (60% Solids). Going ahead, we are in the process of establishing a red mud filtration unit by which red mud can be disposed in dry condition. We are exploring various avenues for utilization of the red mud.
12	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA / EMP /risk analysis and DMP report.	Implementation of environmental protection measures and safe guards are being complied as per the recommendation in EIA/EMP.
13	As proposed in EIA/EMP, Rs. 2.00 Crores and Rs. 43.00 Crores earmarked toward the capital cost and recurring expenditure/annum for environmental protection measures shall be used judiciously to implement the	The funds earmarked has been utilized in implementation of conditions laid down for protection of environment without diverting for any other purpose. The expenditure incurred during the financial year 2015-16 was Rs. 5.20 crores and the

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	conditions stipulated by the Ministry of Environment and Forests as well as the State Government. The funds so provided shall not be diverted for any other purposes.	details of for the same is attached as **ANNEXURE-IV**.
14	The Regional Office of this Ministry at Bhubaneswar / Central Pollution Control Board / OSPCB shall monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation should be submitted to them regularly.	Six monthly reports are being submitted regularly to Regional Office of the Ministry at Bhubaneswar / Central Pollution Control Board / SPCB, Odisha.
15	The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the Orissa State Pollution Control Board / Committee and may also be seen at Website of the Ministry of Environment and Forests at http:://envfor.nic.in. This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office.	Complied
16	The Project Authorities should inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Complied

Ambient Air Quality (AAQ) Monitoring Results
Period: Oct'15 - Mar'16 (Monthly Average Values)

AAQ-1

Near Admin Building	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO mg/m^3
Oct.15	53.56	36.09	5.19	12.71	0.24
Nov.15	50.13	34.20	4.99	12.35	0.21
Dec.15	45.56	34.41	4.91	12.34	0.21
Jan'16	47.11	37.90	5.59	13.01	0.27
Feb'16	57.75	38.53	5.55	13.08	0.27
March'16	48.22	28.44	5.68	13.18	0.29
Six Months Average	**50.39**	**34.93**	**5.32**	**12.78**	**0.25**

AAQ-2

Nuapada Township	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m3	CO mg/m^3
Oct.15	34.89	31.31	4.53	11.91	0.19
Nov.15	41.50	29.83	4.35	11.58	0.16
Dec.15	53.00	30.34	4.33	11.50	0.16
Jan'16	48.44	23.16	4.81	12.02	0.20
Feb'16	39.38	31.25	4.93	12.19	0.21
March'16	29.00	20.52	4.96	12.47	0.23
Six Months Average	**41.03**	**27.73**	**4.65**	**11.94**	**0.19**

AAQ-3

Doraguda	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO mg/m^3
Oct.15	43.67	25.40	4.06	10.73	0.13
Nov.15	39.88	23.41	4.03	10.38	0.11
Dec.15	40.56	24.12	4.04	10.26	0.11
Jan'16	46.22	26.77	4.11	10.82	0.13
Feb'16	46.75	26.53	4.19	10.90	0.14
March'16	47.56	27.47	4.22	11.26	0.14
Six Months Average	**44.10**	**25.62**	**4.11**	**10.72**	**0.13**

AAQ-4

Dimundi Boundary wall	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO mg/m^3
Oct.15	31.33	29.69	4.31	11.59	0.17
Nov.15	47.25	27.50	4.15	11.16	0.14
Dec.15	48.89	29.31	4.12	11.08	0.13
Jan'16	34.67	20.16	4.52	11.58	0.17
Feb'16	54.50	31.09	4.61	11.84	0.18
March'16	45.33	31.58	4.68	12.07	0.19
Six Months Average	**43.66**	**28.22**	**4.40**	**11.55**	**0.16**

AAQ-5

Training Center (Inside plant)	PM_{10} $\mu g/m^3$	$PM_{2.5}$ $\mu g/m^3$	SO_2 $\mu g/m^3$	NO_2 $\mu g/m^3$	CO mg/m^3
Oct.15	49.22	33.57	4.87	12.31	0.22
Nov.15	35.75	31.14	4.61	11.99	0.18
Dec.15	30.11	21.94	4.58	11.89	0.19
Jan'16	52.33	34.92	5.18	12.48	0.23
Feb'16	43.25	35.45	5.23	12.61	0.23
March'16	32.56	25.38	5.27	12.78	0.26
Six Months Average	**40.54**	**30.40**	**4.95**	**12.34**	**0.22**

AAQ-6

Near BSNL tower (Inside plant)	PM_{10} $\mu g/m^3$	$PM_{2.5}$ $\mu g/m^3$	SO_2 $\mu g/m^3$	NO_2 $\mu g/m^3$	CO mg/m^3
Oct.15	47.89	27.63	4.16	11.16	0.15
Nov.15	43.50	25.60	4.08	10.78	0.13
Dec.15	45.11	26.20	4.12	10.69	0.12
Jan'16	50.44	28.89	4.29	11.20	0.15
Feb'16	50.88	29.49	4.36	11.45	0.16
March'16	51.22	29.52	4.46	11.64	0.17
Six Months Average	**48.17**	**27.89**	**4.24**	**11.15**	**0.14**

Note : No deviation from the NAAQS is observed and all the values are with in the standard prescribed under National Ambient Air Quality Standards (NAAQS)

UTKAL ALUMINA INTERNATIONAL LTD. DORAGUDA

Stack Monitoring Results
Period: Oct'15-Mar'16 (Monthly Average Values)

1. CALCINER - A

Parameter	Prescribed Standard	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16	6 Months Average
Temperature ^0C	....	154	148	151	159	149	151	**152.00**
Velocity m/sec	....	7.4	7.1	7.1	7.1	7.2	7.7	**7.27**
Particulate Matter mg/Nm^3	**50**	29	28	32	26.5	31	36	**30.42**
SO_2 (mg/Nm^3)	....	74.9	71.5	75.1	55.2	69.5	74.5	**70.12**
NOx (mg/Nm^3)	....	43.1	36.1	42.8	41.8	42.6	52.1	**43.08**
CO (mg/Nm^3)	....	66.5	59.3	66.4	66.1	65.2	58.7	**63.70**
PAH (mg/Nm^3)	....	1	1.1	1	0.74	1.1	0.93	**0.98**

2. CALCINER -B

Parameter	Prescribed Standard	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16	6 Months Average
Temperature ^0C	....	159	153	156	167	153	158	**157.67**
Velocity m/sec	....	7.8	7.5	8.3	8.3	7.5	8.1	**7.92**
Particulate Matter mg/Nm^3	**50**	26	34	37	38.4	38	43	**36.07**
SO_2 (mg/Nm^3)	....	68.1	77.2	83.8	64.8	65.3	81.6	**73.47**
NOx (mg/Nm^3)	....	35.1	39.4	54.6	53.6	33.9	47.4	**44.00**
CO (mg/Nm^3)	....	58.2	67.1	78.2	77.4	57.1	63.9	**66.98**
PAH (mg/Nm^3)	....	0.92	1	1.1	0.82	1	1.1	**0.99**

3. CPP Unit-1 of Power Plant

Parameter	Prescribed Standard	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16	6 Months Average
Temperature ^0C	....	137	134	130	123	135	145	**134.00**
Velocity m/sec	....	17.9	15.6	15	13.94	14.99	15.9	**15.56**
Particulate Matter mg/Nm^3	**50**	33	26	34	29	36	33	**31.83**
SO_2 (mg/Nm^3)	**600**	287	251	196	214	244	265	**242.83**

UTKAL ALUMINA INTERNATIONAL LTD. DORAGUDA

NOx (mg/Nm^3)	**300**	51	64	73	109	69	73	**73.17**
CO (mg/Nm^3)	....	68	46	58	79	73	58	**63.67**
PAH (mg/Nm^3)	....	0.78	0.68	0.71	0.83	0.65	0.58	**0.71**

4. CPP Unit-2 of Power Plant

Parameter	Prescribed Standard	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16	6 Months Average
Temperature ^{0}C	....	129	125	127	129	CFB-2 was not in operation		**127.50**
Velocity m/sec	....	16.7	14.2	14.3	14.48			**14.92**
Particulate Matter mg/Nm^3	**50**	27	31	27	24			**27.25**
SO_2 (mg/Nm^3)	**600**	249	219	178	193			**209.75**
NOx (mg/Nm^3)	**300**	43	52	61	94			**62.50**
CO (mg/Nm^3)	....	57	39	46	61			**50.75**
PAH (mg/Nm^3)	....	0.5	0.61	0.58	0.66			**0.59**

5. CPP Unit-3 of Power Plant

Parameter	Prescribed Standard	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16	6 Months Average
Temperature ^{0}C	....	CFB-3 was not in operation				127	143	**135.00**
Velocity m/sec	....					14.75	15.75	**15.25**
Particulate Matter mg/Nm^3	**50**					31	40	**35.50**
SO_2 (mg/Nm^3)	**600**					211	258	**234.50**
NOx (mg/Nm^3)	**300**					54	65	**59.50**
CO (mg/Nm^3)	....					59	51	**55.00**
PAH (mg/Nm^3)	....					0.51	0.46	**0.49**

Note : No deviation is observed and all the values are with in the standard prescribed under EC & CTO

UTKAL ALUMINA INTERNATIONAL LTD. DORANDA

Ground Water Quality & Ground Water Level

GW1: Dimundi

Sl. No.	Parametres	Unit	IS-10500 Standards	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16
1	Colour	Hazen	5.0	CL	CL	CL	CL	CL	CL
2	Odour	-	Unobjectable	Unobjectable	Unobjectable	Unobjectable	Unobjectable	Unobjectable	Unobjectable
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	1	0.57	0.44	0.53	0.46	0.49	0.42
5	pH	-	6.5-8.5	7.2	7.1	7.2	7.2	7.2	7.2
6	Temparature	^0C	-	25	25	25	25	25	25
7	Total Dissolved Solids	mg/l	500	139	126	116	109	111	104
8	Total Hardness	mg/l	300	53	46	47.2	52.1	49.5	46.2
9	Calcium as Ca	mg/l	75	9.4	8.8	8.4	9.4	8.8	9.4
10	Magnesium (as Mg)	mg/l	-	6.8	6.5	6.5	7	6.7	7.1
11	Residual Free Chlorine	mg/l	0.2	BDL	BDL	BDL	BDL	BDL	BDL
12	Free CO_2	mg/l	-	0.96	0.88	0.74	0.82	0.69	0.58
13	Sulphates (as SO_4)	mg/l	200	15.2	14.5	12.8	14.6	12.1	11.5
14	Chlorides (as Cl)	mg/l	250	9.2	8.8	8.4	10.2	10.3	9.8
15	Fluorides (as F)	mg/l	1.0	BDL	BDL	BDL	BDL	BDL	BDL
16	Acidity	mg/l	-	4.1	3.8	3.3	4.2	3.6	2.9
17	Alkylinity	mg/l	200	24	21	28	36	35	28
18	Iron (as Fe)	mg/l	0.3	0.11	0.13	0.11	0.13	0.12	0.11
19	Mineral Oil	mg/l	0.01	NIL	NIL	NIL	NIL	NIL	NIL
20	Manganese (as Mn)	mg/l	0.1	BDL	BDL	BDL	BDL	BDL	BDL
21	Total Coliform	MPN/100ml	<2	NIL	NIL	NIL	NIL	NIL	NIL
22	Mercury (as Hg)	mg/l	0.001	BDL	BDL	BDL	BDL	BDL	BDL
23	Arsenic (as As)	mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
24	Zinc (as Zn)	mg/l	5.0	0.16	0.23	0.18	0.15	0.25	0.19
25	Cadmium (as Cd)	mg/l	0.01	BDL	BDL	BDL	BDL	BDL	BDL
26	Selenium (as Se)	mg/l	0.01	BDL	BDL	BDL	BDL	BDL	BDL
27	Cyanide (as CN)	mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
28	Copper (as Cu)	mg/l	0.5	BDL	BDL	BDL	BDL	BDL	BDL
29	Phenolic Compound (as C_6H_5C	mg/l	0.001	BDL	BDL	BDL	BDL	BDL	BDL
30	Lead (as Pb)	mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
31	Pestiside	mg/l	NIL	NIL	NIL	NIL	NIL	NIL	NIL

UTKAL ALUMINA INTERNATIONAL LTD. BARBIDA

GW2: Lachuguda

Sl. No.	Parametres	Unit	IS-10500 Standards	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16
1	Colour	Hazen	5.0	CL	CL	CL	CL	CL	CL
2	Odour	-	Unobjectable	Unobjectable	Unobjectable	Unobjectable	Unobjectable	Unobjectable	Unobjectable
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	1	0.61	0.53	0.48	0.41	0.45	0.38
5	pH	-	6.5-8.5	7	7.1	7.1	7.2	7.1	7.1
6	Temparature	^0C	-	25	25	25	25	25	25
7	Total Dissolved Solids	mg/l	500	158	135	126	113	119	112
8	Total Hardness	mg/l	300	57.9	51	51.3	56	52.8	51.9
9	Calcium as Ca	mg/l	75	9.9	9.3	8.9	9.7	9.3	9.9
10	Magnesium (as Mg)	mg/l	-	7.4	6.9	7.1	7.5	7.2	7.5
11	Residual Free Chlorine	mg/l	0.2	BDL	BDL	BDL	BDL	BDL	BDL
12	Free CO_2	mg/l	-	0.94	0.9	0.81	0.79	0.78	0.66
13	Sulphates (as SO_4)	mg/l	200	17.9	16.2	14.9	16.1	14.4	13.9
14	Chlorides (as Cl)	mg/l	250	9.8	9.4	8.9	9.6	9.9	9.1
15	Fluorides (as F)	mg/l	1.0	0.05	0.05	0.05	0.05	0.05	0.03
16	Acidity	mg/l	-	4.5	4.1	3.7	4.6	3.9	3.3
17	Alkylinity	mg/l	200	33	26	24	29	29	24
18	Iron (as Fe)	mg/l	0.3	0.13	0.12	0.14	0.11	0.13	0.12
19	Mineral Oil	mg/l	0.01	NIL	NIL	NIL	NIL	NIL	NIL
20	Manganese (as Mn)	mg/l	0.1	BDL	BDL	BDL	BDL	BDL	BDL
21	Total Coliform	MPN/100ml	<2	NIL	NIL	NIL	NIL	NIL	NIL
22	Mercury (as Hg)	mg/l	0.001	BDL	BDL	BDL	BDL	BDL	BDL
23	Arsenic (as As)	mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
24	Zinc (as Zn)	mg/l	5.0	0.21	0.19	0.16	0.12	0.21	0.17
25	Cadmium (as Cd)	mg/l	0.01	BDL	BDL	BDL	BDL	BDL	BDL
26	Selenium (as Se)	mg/l	0.01	BDL	BDL	BDL	BDL	BDL	BDL
27	Cyanide (as CN)	mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
28	Copper (as Cu)	mg/l	0.5	BDL	BDL	BDL	BDL	BDL	BDL
29	Phenolic Compound (as C_6H_5C	mg/l	0.001	BDL	BDL	BDL	BDL	BDL	BDL
30	Lead (as Pb)	mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
31	Pestiside	mg/l	NIL	NIL	NIL	NIL	NIL	NIL	NIL

UTKAL ALUMINA INTERNATIONAL LTD. RAYAGUDA

GW3: Kuchipada

Sl. No.	Parametres	Unit	IS-10500 Standards	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16
1	Colour	Hazen	5.0	CL	CL	CL	CL	CL	CL
2	Odour	-	Unobjectable	Unobjectable	Unobjectable	Unobjectable	Unobjectable	Unobjectable	Unobjectable
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	1	0.59	0.46	0.61	0.54	0.58	0.51
5	pH	-	6.5-8.5	7.2	7.1	7.2	7.2	7.1	7.3
6	Temparature	^0C	-	25	25	25	25	25	25
7	Total Dissolved Solids	mg/l	500	136	122	114	119	113	108
8	Total Hardness	mg/l	300	51.8	40	45.6	50.1	51	53.4
9	Calcium as Ca	mg/l	75	9.1	8.6	8.1	9.2	9.1	9.5
10	Magnesium (as Mg)	mg/l	-	6.5	6.1	6.2	6.6	6.9	7.2
11	Residual Free Chlorine	mg/l	0.2	BDL	BDL	BDL	BDL	BDL	BDL
12	Free CO_2	mg/l	-	0.78	0.69	0.63	0.74	0.61	0.54
13	Sulphates (as SO_4)	mg/l	200	16.2	15	13.5	21.8	13.1	12.4
14	Chlorides (as Cl)	mg/l	250	9.4	8.7	8.2	9.9	10.2	9.5
15	Fluorides (as F)	mg/l	1.0	BDL	BDL	BDL	BDL	BDL	BDL
16	Acidity	mg/l	-	3.9	3.4	3	4.2	3.4	3.1
17	Alkylinity	mg/l	200	21	18	23	24	27	36
18	Iron (as Fe)	mg/l	0.3	0.1	0.11	0.1	0.12	0.11	0.1
19	Mineral Oil	mg/l	0.01	NIL	NIL	NIL	NIL	NIL	NIL
20	Manganese (as Mn)	mg/l	0.1	BDL	BDL	BDL	BDL	BDL	BDL
21	Total Coliform	MPN/100ml	<2	NIL	NIL	NIL	NIL	NIL	NIL
22	Mercury (as Hg)	mg/l	0.001	BDL	BDL	BDL	BDL	BDL	BDL
23	Arsenic (as As)	mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
24	Zinc (as Zn)	mg/l	5.0	0.13	0.15	0.14	0.17	0.19	0.14
25	Cadmium (as Cd)	mg/l	0.01	BDL	BDL	BDL	BDL	BDL	BDL
26	Selenium (as Se)	mg/l	0.01	BDL	BDL	BDL	BDL	BDL	BDL
27	Cyanide (as CN)	mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
28	Copper (as Cu)	mg/l	0.5	BDL	BDL	BDL	BDL	BDL	BDL
29	Phenolic Compound (as C_6 H_5(	mg/l	0.001	BDL	BDL	BDL	BDL	BDL	BDL
30	Lead (as Pb)	mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
31	Pestiside	mg/l	NIL	NIL	NIL	NIL	NIL	NIL	NIL

UTKAL ALUMINA INTERNATIONAL LTD. DORAGUDA

GW4: Bagrijhala.

Sl. No.	Parametres	Unit	IS-10500 Standards	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16
1	Colour	Hazen	5.0	CL	CL	CL	CL	CL	CL
2	Odour	-	Unobjectable	Unobjectable	Unobjectable	Unobjectable	Unobjectable	Unobjectable	Unobjectable
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	1	0.66	0.51	0.58	0.49	0.56	0.48
5	pH	-	6.5-8.5	7.2	7.2	7.2	7.1	7.2	7.1
6	Temparature	^0C	-	25	25	25	25	25	25
7	Total Dissolved Solids	mg/l	500	147	131	123	107	121	117
8	Total Hardness	mg/l	300	55.1	48	52.4	52.9	54.3	50.7
9	Calcium as Ca	mg/l	75	9.6	9.2	9	9.5	9.6	9.2
10	Magnesium (as Mg)	mg/l	-	7.1	6.7	7.3	7.1	7.4	6.9
11	Residual Free Chlorine	mg/l	0.2	BDL	BDL	BDL	BDL	BDL	BDL
12	Free CO_2	mg/l	-	0.89	0.74	0.68	0.77	0.65	0.61
13	Sulphates (as SO_4)	mg/l	200	17.1	15.8	14.2	18.5	13.9	13.1
14	Chlorides (as Cl)	mg/l	250	10	9.5	9.1	9.5	9.7	9.3
15	Fluorides (as F)	mg/l	1.0	BDL	BDL	BDL	BDL	BDL	BDL
16	Acidity	mg/l	-	4.3	3.6	3.2	3.9	3.6	2.7
17	Alkylinity	mg/l	200	28	22	30	28	31	30
18	Iron (as Fe)	mg/l	0.3	0.09	0.11	0.09	0.1	0.1	0.11
19	Mineral Oil	mg/l	0.01	NIL	NIL	NIL	NIL	NIL	NIL
20	Manganese (as Mn)	mg/l	0.1	BDL	BDL	BDL	BDL	BDL	BDL
21	Total Coliform	MPN/100ml	<2	NIL	NIL	NIL	NIL	NIL	NIL
22	Mercury (as Hg)	mg/l	0.001	BDL	BDL	BDL	BDL	BDL	BDL
23	Arsenic (as As)	mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
24	Zinc (as Zn)	mg/l	5.0	0.18	0.16	0.18	0.14	0.17	0.15
25	Cadmium (as Cd)	mg/l	0.01	BDL	BDL	BDL	BDL	BDL	BDL
26	Selenium (as Se)	mg/l	0.01	BDL	BDL	BDL	BDL	BDL	BDL
27	Cyanide (as CN)	mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
28	Copper (as Cu)	mg/l	0.5	BDL	BDL	BDL	BDL	BDL	BDL
29	Phenolic Compound (as C_6H_5C	mg/l	0.001	BDL	BDL	BDL	BDL	BDL	BDL
30	Lead (as Pb)	mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
31	Pestiside	mg/l	NIL	NIL	NIL	NIL	NIL	NIL	NIL

UTKAL ALUMINA INTERNATIONAL LTD.

WATER LEVEL in meters

Date of Monitoring	Name of the Location	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16
24.04.2015	DIMUNDI	5.2	5.7	6.2	6.9	7.5	8.0
24.04.2015	LACHUGUDA	4.9	5.3	5.9	6.5	7	7.4
24.04.2015	KUCHIPADA	5.6	7.4	8.5	9.5	10	10.7
24.04.2015	BAGRIJHALA	4.8	5.2	5.6	6.1	6.7	7.1

Utkal Alumina International Ltd.

Expenditure incurred on Environment and Pollution Control for the year 2015-16

Sl. No.	Description of expenditure	(Rs. in lakhs)
1	Water Pollution Control Measures (like garland drain, retaining wall, parapet wall etc.)	15.0
2	Plantation and horticulture	80.0
3	Environmental Monitoring	75.0
4	Water Sprinkling For Dust Suppression	80.0
5	Air Pollution Control Equipment Maintenance	80.0
6	Surface runoff Study	50.0
7	Ash pond/RMP maintenance	60.0
8	Statutory	80.0
	Total (Rs. in lakhs)	**520.0**

UTKAL ALUMINA INTERNATIONAL LTD. DARPANDA

Noise Monitoring Results
Period: Oct'15 - Mar'16 (Monthly Average Values)

CORE ZONE NOISE

Sl. No.	NOISE MONITORING LOCATIONS	Oct'15		Nov'15		Dec'15		Jan'16		Feb'16		March'16		6 Months Average	
		Results in dB(A)Leq (Day)	Results in dB(A)Leq (Night)	Results in dB(A)Leq (Day)	Results in dB(A)Leq (Night)	Results in dB(A)Leq (Day)	Results in dB(A)Leq (Night)	Results in dB(A)Leq (Day)	Results in dB(A)Leq (Night)	Results in dB(A)Leq (Day)	Results in dB(A)Leq (Night)	Results in dB(A)Leq (Day)	Results in dB(A)Leq (Night)	Day	Night
1	CPP AREA	61.4	56.5	58.4	53.6	59.7	54.8	58.4	53.5	59.5	54.6	60.6	55.7	**59.7**	**54.8**
		56.8	51.9	53.2	49.1	55.9	51	55.4	50.5	54.3	49.4	57.3	52.4	**55.5**	**50.7**
		61.9	56.4	56.5	52.3	60.9	55.4	60.9	55.4	60.1	54.6	63.7	58.2	**60.7**	**55.4**
		57.4	47.9	55.3	49	56.6	47.1	55.0	45.5	56.4	46.9	56.4	46.9	**56.2**	**47.2**
		65.4	60.3	59.5	53	61.9	56.8	60.3	55.2	59.4	54.3	63.1	58.0	**61.6**	**56.3**
		62.2	58.9	56.9	47	56.4	53.1	57.2	53.9	58.0	54.7	60.6	57.3	**58.6**	**54.2**
		62.2	58.1	54.5	44.1	66.3	62.2	64.2	60.1	63.4	59.3	62.3	58.2	**62.2**	**57.0**
		69.4	65.1	60.1	46	62.5	58.2	64.1	59.8	65.5	61.2	66.9	62.6	**64.8**	**58.8**
		62.2	58	55.4	43	61.6	57.4	60.0	55.8	52.8	48.1	61.4	57.2	**58.9**	**53.3**
2	RAW MATERIAL HANDLING AREA	55.7	49.8	51.8	47	54	48.1	52.4	46.5	51.5	45.6	55.2	49.3	**53.4**	**47.7**
		61.4	55.5	51.8	44.9	56	50.1	56.5	50.6	57.3	51.4	59.9	54.0	**57.2**	**51.1**
		56.7	49.4	51.9	45.4	56.2	48.9	55.4	48.1	56.5	49.2	53.5	46.2	**55.0**	**47.9**
		58.7	50.9	48.6	41.5	54.7	46.9	56.8	49.0	55.7	47.9	59.0	51.2	**55.6**	**47.9**
		61.7	56.2	57.3	49.9	59.5	54	59.5	54.0	58.7	53.2	61.4	55.9	**59.7**	**53.9**
		57.9	51.8	48.1	42.2	56.2	50.1	55.1	49.0	56.5	50.4	57.9	51.8	**55.3**	**49.2**
		64.5	58.4	58.1	51.2	62.1	56	61.8	55.7	60.9	54.8	63.2	57.1	**61.8**	**55.5**
		63	57.4	52.9	47.2	58.3	52.7	59.6	54.0	60.4	54.8	62.4	56.8	**59.4**	**53.8**
		61.7	57.1	46.2	43.9	55.1	50.5	55.6	51.0	55.2	50.1	59.0	54.4	**55.5**	**51.2**
3	NEAR TRAFFIC CENTER	61.8	57.1	58.8	53.2	66.8	62.1	65.0	60.3	64.2	59.5	63.1	58.4	**63.3**	**58.4**
		68	62.3	56.8	51.7	64.6	58.9	64.9	59.2	66.3	60.6	67.7	62.0	**64.7**	**59.1**
		62.1	57.5	57.7	53.5	63.2	58.6	61.3	56.7	60.4	55.8	62.7	58.1	**61.2**	**56.7**
		65.2	60.9	51.2	46.9	58.5	54.2	60.3	56.0	61.1	56.8	63.1	58.8	**59.9**	**55.6**
		67.7	61.9	51	43.5	63.5	57.7	64.0	58.2	63.3	57.5	67.4	61.6	**62.8**	**56.7**
		58.5	52.7	58.1	52.2	59.4	53.6	59.2	53.4	60.3	54.5	57.3	51.5	**58.8**	**53.0**
		67.8	59.2	51.8	45.4	63.2	54.6	63.2	54.6	64.3	55.7	65.4	56.8	**62.6**	**54.4**
		70	63.6	55.9	51.2	64.7	58.3	64.7	58.3	63.6	57.2	66.6	60.2	**64.3**	**58.1**
		62.5	57	51.2	47.9	61	55.5	62.6	57.1	61.9	56.4	65.4	59.9	**60.8**	**55.6**

4	REFINERY AREA	68.8	64.5	59.4	56	65.6	61.3	64.0	59.7	63.2	58.9	65.4	61.1	64.4	60.3
		71.5	65.6	54.9	49.2	66.3	60.4	66.8	60.9	68.2	62.3	69.6	63.7	66.2	60.4
		67.8	61.9	56.8	47.3	63.3	56.1	62.5	55.3	63.6	56.4	65.9	58.7	63.3	56.0
		55.4	50.9	53.5	44.9	58.3	53.8	60.4	55.9	61.3	56.8	58.5	54.0	57.9	52.7
		69	62.7	53.9	43.8	67.2	60.9	65.6	59.3	66.6	60.3	68.4	62.1	65.1	58.2
		65.2	58.8	52	42.4	64.9	58.5	64.7	58.3	64.0	57.6	66.1	59.7	62.8	55.9
		69.8	63.5	57.7	54.1	64.7	58.4	63.6	57.3	64.7	58.4	66.4	60.1	64.5	58.6
		70.4	65.9	60.3	53.8	64.9	60.4	64.6	60.1	64.1	59.6	68.0	63.5	65.4	60.6
		60.5	54.3	56.5	51.2	62.5	57.3	64.6	59.4	60.4	57.1	62.7	57.5	61.2	56.1
Ambient Noise Level Standards in respect of Industrial Area														**75**	**70**

BUFFER ZONE NOISE

Sl. No.	NOISE MONITORING LOCATIONS	Oct'15		Nov'15		Dec'15		Jan'16		Feb'16		March'16		6 Months Average	
		Results in dB(A)Leq (Day)	Results in dB(A)Leq (Night)	Results in dB(A)Leq (Day)	Results in dB(A)Leq (Night)	Results in dB(A)Leq (Day)	Results in dB(A)Leq (Night)	Results in dB(A)Leq (Day)	Results in dB(A)Leq (Night)	Results in dB(A)Leq (Day)	Results in dB(A)Leq (Night)	Results in dB(A)Leq (Day)	Results in dB(A)Leq (Night)	Day	Night
1	TOWNSHIP	42.8	36.4	41.2	35.2	40.9	34.6	45.5	33.2	50.6	44.8	43.5	33.9	**44.1**	**36.4**
2	D. KOROL	45.4	40.1	48.8	43.5	49.1	42.8	54.3	44.5	53.8	43.5	52.9	42.4	**50.7**	**42.8**
3	DIMUNDI	46.7	30.3	42.9	32	53.2	45.4	48.6	44.3	54.1	44.2	53.7	43.8	**49.9**	**40.0**
4	POLICE STATION	44.9	37.6	49.2	41.6	50.8	41.7	52.4	43.1	48.6	41.7	51.7	44.1	**49.6**	**41.6**
5	LACHUGUDA	46.3	30.7	51.6	43.5	45.7	38.5	51.3	44.4	46.5	38.4	49.4	42.7	**48.5**	**39.7**
6	NUAPADA	50.1	35.1	53.8	48.3	48.7	44.2	53.5	42.7	51.2	44.1	52.9	43.3	**51.7**	**43.0**
7	KUCHIPADA	45.4	37.3	55.6	48.1	47.4	41.8	48.3	43.9	49.4	41.6	50.6	44	**49.5**	**42.8**
8	DORAGUDA	43.9	36.7	50.4	44.7	50.6	43.9	51.6	44.6	54.1	43.9	54.1	42.8	**50.8**	**42.8**
Ambient Noise Level Standards in respect of Residential Area														**55**	**45**

Note : No deviation from the AAQ standard in respect of Noise is observed and all the values are with in the standard prescribed.