

UAIL /ENV/2018-19/11

28.05.2018

To,

The Addl. Principal 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 stipulated 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 stipulated in the Environmental Clearance for the period from 1st October 2017 to 31st March 2018 with respect to our project 1.0 MTPA Alumina Refinery & 50 MW Co- generation power plant vide Ministry's letter no. J-11011/76/94-IA.II (I) dated 27.09.95 and 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

This is for your kind information and necessary records please,

Thanking you,

Yours faithfully.

For Utkal Alumina International Ltd.

(N. Nagesh)

Unit Head & President

Encl: As above.

Copy To: (i) Member Secretary, OSPCB, Bhubaneswar.

(ii) Regional Office, CPCB, Kolkata.

(iii) Regional Officer, OSPCB, Rayagada.

3 1 May 2018

CIN No.: U13203OR1993PLC003416

Ph: 0674 2360581/540 Fax 0674 2360321

Fax: 06865287100

Ph: 06865287040.

Website www.hindalco.com/ Email utkal:alumina@adityabirla.com



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35 to APCCF (Centrall) 15 to APCCF (Centrall) Bhubaneswar-751023 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.

SI. No.	Imposed Conditions				Compli	ance Sta	ıtus		
A.SF	PECIFIC CONDITIONS:								
1	Adequate air pollution control measures shall be provided to control particulate			alled a	at suitab	ution cor le locatio	ons.		have
	matter Emissions within 50 mg/Nm³. On- line monitoring of particulate matter shall be carried out and reports submitted to the Ministry's Regional Office at		SI N o.	Loca	tion	Contro Details		evice	
	Bhubaneswar, CPCB and OSPCB. The height of the stacks shall be as per the CPCB guidelines.		1	Power plant (Boile 1,2,3	ers-	each connec	neter h	& the neight	
			2	Calci plant B)	nation (A &		Calcine ted to	er & 136	
		stac insta beer CPC	MS) i ks called. In coi CB fo	in exisof Ca These nnecte	ting thre lciners Online d with tinuous	nission Mee stack of Refi monito the ser transmi	s of CF inery h ring sys vers of	PP and nave to the stems of SPC	two been have B &
		State Mini CPC during encl The period	e Postry's B on ng the osed sumi	ollution Reginate in a perion as AN mary of the color of	n Contonal Otesix monodocto INEXUF of stack	ffice at I ths. The ber 2017	ard and Bhuband monitor to Maren	d to eswar ored res och 201 during	the and sults 18 is
			Parar	meter	Max	Min	Avg	Norm	
			Partic Matte mg/Nr	r	33.1	23.1	28.4	50	
			SO ₂ (mg/N	lm³)	270.8	201.0	231.5		
			NOx (mg/N	lm³)	84.5	47.0	THE REAL PROPERTY.		
						DOR	AGUDA		

Calciner-B

Parameter	Max	Min	Avg	Norm
Particulate Matter mg/Nm3	35.3	23.5	29.7	50
SO2 (mg/Nm3)	303.3	189.0	243.7	18821
NOx (mg/Nm3)	140.3	59.0	82.1	

From the above test results, it is evident that parameters are within the norm prescribed in the EC & CTO and no there is no deviation observed. Hence, complied.

CPP. Unit #1

. ,				
Parameter	Max	Min	Avg	Norm
Particulate Matter mg/Nm³	42.5	32.4	39.3	50
SO ₂ (mg/Nm ³)	506.3	318.0	455.9	600
NOx (mg/Nm³)	197.5	139	164.3	300

CPP, Unit #2

Parameter	Max	Min	Avg	Norm
Particulate Matter mg/Nm ³	41.6	33.8	39.2	50
SO ₂ (mg/Nm ³)	496	384.2	441.8	600
NOx (mg/Nm³)	187.5	116	148.2	300

CPP, Unit #3

Parameter	Max	Min	Avg	Norm
Particulate Matter mg/Nm³	45.2	35.5	40.9	50
SO ₂ (mg/Nm ³)	490.1	390.2	448.7	600
NOx (mg/Nm³)	188	100.7	149.7	300

From the above test results, it is evident that parameters are within the norm prescribed in the EC & CTO and no there is no deviation observed. Hence, complied.

The company shall install electrostatic precipitator (ESP) to power boilers to control emissions within 50 mg/Nm³. 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

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Electrostatic precipitator (ESPs) designed to control particulate matter emissions within 50 mg/Nm³ and connected to the three pollers of the Power Plant with online monitoring system.

The following provisions control fugitive emission:

a) Dry mud sacking system has been adopted by

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.

installing Red Mud Filtration Unit. Dry mud is being stacked by compacting and water sprinkling to check fugitive emission.

b) Bag filters have been provided at different locations and details of bag filters are as below.

Location	Quantity (Nos)	Capacity (m3/hr)
Bauxite Crusher	One	58500
Calciner	Two	Bag filter1: 4260 Bag filter2: 4260
Alumina handling	Three	Bag filter1: 32000 Bag filter2: 32000 Bag filter3: 7000
Coal crusher	Two	Bag filter1: 13500 Bag filter2: 13500

Fixed high jet water spraying system have been installed at bauxite & coal handling areas. Wagon Tippler with dry fog system at coal unloading area and closed type pipe conveyor system have been provided. Fully covered conveyors with water spraying system at transfer points for bauxite transportation have been provided.

c) Two nos wet scrubbers at lime handling area have been provided.

Garland drains around red mud pond and fly ash disposal area have been provided.

Complied. The monitored results during the period October 2017 to March 2018 of PAH is enclosed herewith as **ANNEXURE-IV**.

PAH monitored during this period is as below.

Location	PAH (μg/m3)				
	Oct'17 to	Jan'18 to			
	Dec'17	Mar'18			
A.D.Building	<0.001	<0.001			
BSNL Tower	<0.001	<0.001			

Total water requirement from San River (Upstream of Indravati Reservoir) shall not exceed 22,330 m³/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. Multieffect evaporators shall be installed to recover water and recycle for process consumption to reduce the fresh consumption. The domestic wastewater shall be treated in the Sewage Treatment Plant (STP) and treated wastewater conforming to the standards for land application shall be reused for green belt development.

The average water consumption per day is around 9000 to 10000 m3. The waste water generated in the Alumina refinery are alkaline in nature with suspended particles of Red Mud. All this waste water from the process is centrally collected through a dedicated drainage system (RCC) in a concreted pond called the Caustic Pond bottom lined with LDPE. The waste water so collected is entirely recycled back to the process for Red Mud washing and the sediments are disposed in red mud pond.

Similarly in the CPP, the blow down water from the Boilers and the Cooling towers along with the DM Plant waste water are collected in a Holding Pond after sedimentation and neutralization. This water is also entirely reused for sprinkling in CHP, AHP, Roads and Ash conditioning.

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.

Similarly, the surface run-off water is also collected centrally in a pond called the Guard Pond having neutralization system at the inlet with continuous pH monitoring. This water is also entirely recycled into the process for Red Mud washing.

The quality of water of guard pond, Neutralization Pit and Holding Pond are being monitored continuously to maintain the pH well within the prescribed norms. The above mentioned collection and treatment systems at specific required locations are parts of waste water management & treatment system.

Moreover 100% of the waste water so generated is being reused in the process and no waste water is discharged to outside the plant as the plant operates on a Zero Discharge principle. The zero discharge condition is ensured by continuous surveillance through web camera and flow meter as per CPCB guidelines. The generated waste water from Red Mud Filter Unit, 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 reused for green belt development and horticulture.

The treated water quality of STP for the period Oct'17 to March'18 is enclosed as *Annexure-II* and the summary of treated water quality of STP is as below

Parameter	Max	Min	Avg	Norm
рH	7.3	6.7	6.9	5.5-9.0
COD (mg/l)	42.5	12.0	24.1	Max. 250
BOD (mg/l)	9.0	3.6	5.8	Max. 30
O&G (mg/l)	1.2	0.6	1.0	Max. 10
TSS (mg/l)	23.5	12.4	17.9	Max. 100

From the above test results, it is evident that the monitored parameters are within the prescribed standard of EC & CTO and no there is no deviation observed.

Hence, complied.

Red mud, sand scales are being disposed-off to red mud pond. Lime grit is utilised in fly-ash brick manufacturing. Red mud is being filtered using high pressure plate and frame filters with

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.

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HDPE lining shall be provided to avoid membrane. The Red mud cake at 75-80% solids any leakage to the ground. Leachate being disposed to the Pond through conveyors. collection facilities shall be provided to the HDPE lining has been provided in the red mud secured landfill facility (SLF). Proper care pond. Leachate of the red mud pond is collected shall be taken to ensure no run off or in a HDPE lined pond facility and the same is seepage from the red mud disposal site to recycled to the process. natural drainage. The location and design Red mud pond has been constructed as per of the landfill site shall be approved by the design and drawing approved by State the OSPCB as per Hazardous Wastes Pollution Control Board vide their Letter No. (Management and Handling) Rules, 2003. 19306/IND-IV-HW-931 dated 30.08.2012. The Efforts shall also be made to find out red mud pond is lined with clay & 1.5 mm productive uses of red mud in brick and HDPE liner with sub-soil drainage collection & ceramic products etc. STP sludge shall be reuse system, run-off drainage network and utilized as manure for green leachate collection facility. Red mud samples development. All the used oil and have been sent to various research laboratories batteries shall be sold to the authorized like IIT, IMMT, and ACC for its productive recyclers/reprocessors. 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 Monitoring of ground water in existing bore wells/ carried out all around the fly ash and red Piezometers around ash pond & red mud area is mud disposal area by installing being carried out in each season and the Piezometers in consultation with the monitored data during the period October 2017 to OSPCB /SGWB /CGWB and data March 2018 is enclosed as ANNEXURE- III. submitted to the Ministry' Regional Office and OSPCB. 7 Fly ash shall be utilized as per Fly Ash Presently fly ash is being used to fill low lying Notification, 1999 and as amended in areas within the plant premises, dyke height 2003. The industry shall also take steps increase, road making and supply to brick to utilize ash to maximum extent by itself manufacturing units. Utilization is 88% during the and shall provide all facilities to other FY 2017-18. The plant is situated at a remote potential users viz. cement and brick place. There are only four fly ash brick manufacturers. manufacturing units around 20 km radius of the plant and no cement industry exists within 150 km radius of the plant. The ash generation & utilization of last two years is as below. Utilization FΥ Generation (MT) (MT) 2015-16 262984 71084 2016-17 211595 142520 2017-18 250019 220403 Green belt of adequate width and As on date, green belt have been developed over density around the project site shall be an area of 320 ha out of the targeted 338 ha, developed in 338 ha out of total 1015.3 within plant premises, outside the plant, red mud ha. (33 %) in consultation with the DFO pond area, ash pond area, railway corridor etc. as per the CPCB guidelines. during the year 2017, around 1.12 lac saplings have been planted to achieve the target of 338 ha and achieve the tree density as per the CPCB guidelines. The saplings planted are Jamun, Neem, Arjun, Amla, Jack fruit, Kadam, Alstonia, Guava, Mango, Karanj, Chakunda, Sesame etc. Prior permission and recommendations We have been approaching the DFO, Rayagada the for the same, and we are yet to receive any State Forest Department regarding impact of the proposed recommendations. Upon receipt Tethe expansion of the Alumina Refinery on the recommendations will be implemented. However, Sirigurha R.F. (8.8 km. N), Balia Kharha we have deposited CAMPA fund under 50 Act, R.F. (6.4 Km., ENE), Masimandi PF (2.5 1980 for protection of flora and fauna of the km, S), Leliguma R.F. (9 km. ENE), locality.

10	Titigurha RF (10 Km, ESE) shall be obtained and recommendations suggested, if any, shall be implemented. All the environmental conditions stipulated for the existing Alumina Refinery Plant (1.0 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. This environmental clearance is subject to the outcome of the Court Case in	Agreed. The compliance report for the same is being submitted along with six monthly compliance report to the Regional Office of the Ministry and is enclosed as Annexure-A . Agreed. The matter is pending before the Hon'ble High Court of Orissa. The details of the case have
	W.P. No. 5697 of 2007 (Prafulla Samantray vs. Union of India and Others) pending in the Hon'ble High Court of Orissa.	already been submitted vide our letter No. UAIL/ENV/2014-15/56 dated 17.02.2015.
B. G	ENERAL 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 and adhered to.
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. In addition, continuously the emissions data being sent to the servers of the OSPCB and the CPCB through the RTDAS system. 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, SO 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 six nos. of AAQ stations considering pre-dominant wind direction and maximum ground level concentration in consultation with SPCB. In addition, four numbers of CAAQMS have also been installed to monitor the ambient air quality on continuous basis. Also, the CAAQMS data is being transmitted to OSPCB server through RTDAS. 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 2017 to March CORAGUDA DORAGUDA

		Parameter	Max.	Min.	Avg.	NAA QS
		PM ₁₀ µg/m ³	51.3	42.8	45.8	60
		PM _{2.5} μg/m ³	33.8	22.9	28.2	40
		SO ₂ µg/m ³	10.5	6.8	8.0	50
		NO ₂ μg/m ³	20.7	10.9	15.6	40
		CO mg/m ³	0.23	0.16	0.19	04
		From the about all the parameter standard of Note there is no complied.	eters a lationa	are witi I Ambie	hin the ent Air (prescribed Quality and
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 management of Bauxite crushing fog system, collection/water on stockpiles.	ng, hand covered sprayi	dling are I conve ing on r	ea by ba eyors a roads an	g filters, dry nd spillage id sprinkling
6	Industrial wastewater 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 form time to time. The treated wastewater shall be recycled in the plant as well as utilization for plantation purposes.	1. The waste waste waste in process. 2. The spills a liquids are rou and recycled be pond. 3. The storr connected to process. 4. The scrubbe being completes. Provision is discharge water and reuse of gardening an treatment.	tored in ess. Ind other ted to proceed the eddique of the edge of	er caus the res process er dra pond a tilized in to col n pond i domesti	per lined through through and reumen handle the sand in the sand t	d pond and ing process area sumps the caustic network is sed in the ling plant is ne process. I reuse the me process water in
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 of work handled as	kshop oper the nageme les, 20 from the desired 1 nent and series 1	etc. is between the American A	peing co ardous ad Trar PCB, C No. I 16 for posal of	llected and and Other asboundary Odisha has ND-IV-HW- collection,
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 design of noise control silencers, enclois well within levels within 7 (nighttime). The during the period	installe device osures (85 dB 5 dB e monit	ed equi es like etc. The A) and A (dayt ored re	pment in acous overall the aminue and sults of i	tic hoods, noise level blent noise d 70 dB A noise levels

	the standards prescribed under EPA Rules, 1989 viz. 75 dB A (daytime) and 70 dB A (nighttime).	enclosed as ANNEXURE- V. The summary of noise during the period October 2017 to March 2018 is as below.
		Area Max Min Avg Industrial 70.6 52.9 61.4 Residential 53.4 35.5 45.8
		From the above test results, it is evident that Noise levels are within the prescribed norm and no deviation is observed from Ambient air quality standard in respect of Noise for industrial and residential areas. Hence, complied.
9	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.	 Pre-employment Health check-up is being carried out for all the employees at the time of joining. As per The Factories Act -1948 periodical Health check-up is being carried out on annual basis for all the employees and records are maintained and submitted to the Director of Factories & Boilers, Odisha.
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 m³ (Dimension: Ø 71.5m X depth 3.3m), 25, 905 m³ (Dimension: Ø 100 m X 3.3m depth) and 10,000 M³ 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. Hence six recharge pits have been constructed to harvest roof top rain water for ground water recharge at the 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). Adhering to new scientific technology, State of the Art red mud filtration unit has been installed and commissioned by which red mud is now being disposed in semi-dry condition (75-80% solids). 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 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.	The funds earmarked have been utilized in implementation of conditions laid down for protection of environment without diverting for any other purpose. The expenditure incurred during the last FY 2017-18 is around Rs. 337.6 lakhs. The details of the same instance in ANNEXURE- VI.

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