





Works & Registered Office : A-1, Industrial Area, Bazpur Road. Kashipur - 244713, Distt. Udham Singh Nagar (Uttarakhand)
Tel. No.: +91 5947 269000 / 269500 / 275320, +91 9411108202, Fax No.: +91 5947 275315, 269535
Website : www.indiaglycols.com

Ref: AG/MoEF & CC/EC Comp-Ethanol/2020/02

Dated: November 27th, 2020

To,

Dr. Bhardwaj Adiraju, Scientist 'C', GOI Ministry of Environment, Forests & Climate Change Regional Office (North-Central Zone) 25, Subhash Road, Dehradun – 248001

Subject: Six Monthly Compliance Report of the Conditions of Environmental Clearance for Expansion of Distillery Unit by M/s India Glycols Limited at A – 1, Industrial Area Bazpur Road, Kashipur, District Udham Singh Nagar, Uttarakhand.

Dear Sir,

Please find enclosed herewith the Compliance Report of the Conditions of Environmental Clearance for the Expansion of Distillery Unit at A-1, Industrial Area, Bazpur Road, Kashipur, District – Udham Singh Nagar, Uttarakhand by M/s India Glycols Limited for the Period April, 2020 to September, 2020 along with dully filled Data – Sheet.

We assure that we are adhering all the safety measures at work place alongwith the guidelines to implement strict social distancing and isolation measures to contain the spread of COVID-19 and complying with all the conditions as stipulated in the EC granted by Ministry of Environment & Forests, GOI, New Delhi.

We hope that the given data would be sufficient to meet the requirement.

Thanking You,

Yours Faithfully

For M/s INDIA GLYCOLS LIMITED

(Dr. Ashutosh Gautam) Head (Environment)

Encl.: Compliance Report for the Period of April, 2020 to September, 2020

CC: CPCB, Zonal Office (North), PICUP Bhawan, Vibhuti Khand, Gomti Nagar, Lucknow 226010

UKPCB, "Goura Devi Paryavaran Bhawan", 46 B, I.T. Park, Sahastradhara Road Dehradun – 248001

CIN: L24111UR1983PLC009097



IGL Kashipur <iglemdk@gmail.com>

Six Monthly EC Compliance Reports of Ethanol & Lignocellulosic Biomass based Pilot Plant of IGL Kashipur

1 message

IGL Kashipur <iglemdk@gmail.com>

Mon, Nov 30, 2020 at 4:10 PM

To: bharadwaj810@gmail.com, moef.ddn@gov.in Cc: gautamashutosh9 < gautamashutosh9@gmail.com>

Dear Sir,

Greetings of the Day....!!

Please find attached herewith the Six Monthly Compliance Report of Environmental Clearance of M/s India Glycols Limited (Ethanol Plant & Lignocellulosic Biomass based Pilot Plant) at A1 Industrial Area, Bazpur Road, Kashipur, District U.S. Nagar, Uttarakhand for the Period of April 2020 - September 2020.

IGL, Kashipur Plant:-

Environmental Clearance Details:

Expansion of Distillery Unit vide MoEF Clearance Letter No. J-11011/219/2003-IA II Dated 24.06.2004 & J-11011/219/2003-IA11 (1) Dated 11.07.2006.

Installation of Lignocellulosic Biomass Processing Pilot Plant for taking trials to Produce Ethanol vide MoEF Clearance Letter No. J - 11011/488/2010-IA II (I) Dated 22.03.2013.

Encls:

- 1. Compliance Report of Ethanol Plant alongwith Pertinent Annexures
- 2. Compliance Report of Lignocellulosic Biomass Processing Pilot Plant

Thanks & Regards

Jitendra K Jawla IGL, Kashipur

2 attachments

IGL_KSP_Ligno cellulosic Biomass based Pilot Plant_EC Compliance_April 2020 to Sep 2020.pdf

IGL_Ethanol Plant_EC Compliance _April 2020 to Sep 2020.pdf 20436K

SIX MONTHLY COMPLIANCE REPORT OF

THE CONDITIONS

OF

ENVIRONMENTAL CLEARANCE FOR

EXPANSION OF DISTILLERY UNIT
AT

A – 1, INDUSTRIAL AREA BAZPUR ROAD,

KASHIPUR, DISTRICT UDHAM SINGH

NAGAR, UTTARAKHAND

ENVIRONMENTAL CLEARANCE

J-11011/219/2003-IA.II DATED 24.06.2004 &

J-11011/219/2003-IA11 (1) DATED 11.07.2006

Period of Compliance: April 2020 to September 2020



M/S INDIA GLYCOLS LIMITED

Name of the Project: Ethanol Plant (Capacity - 425 KL/Day) of M/s India Glycols Limited.

Clearance Letter No: <u>J-11011/219/2003-IA.II DATED 24.06.2004</u> & <u>J-11011/219/2003-IA11</u> (1) DATED 11.07.2006

Period of Compliance Report: April, 2020 to September, 2020

A. Specific conditions w.r.t. the Environment Clearance for revision of ETP Scheme (*J-11011/219/2003-IA11 (1) DATED 11.07.2006*) for achieving zero discharge (Capacity 425.0 KLPD):

S.	CONDITIONS	:	COMPLIANCE STATUS
No.			
i).	Out of 425 KLPD Distillery Unit, capacity for the Molasses based	:	India Glycols Limited had established & commissioned a
	is 325 KLPD and Cane Juice based is 100 KLPD.		stand- alone 120.0 KLPD molasses based Distillery Plant in
			the year 1988-89. Due to increasing demand of alcohol IGL
			expanded distillery capacity from 120.0 KLPD to 205.0 KLPD in
			the year 1999 and 205.0 KLPD to 425.0 KLPD in the year 2004.
			NOC for establishing 120.0 KLPD distillery plant was granted
			vide letter no. 3944/NOC/India Glycols Ltd./87 dated
			13.03.1987 by Uttar Pradesh Pollution Control Board, Lucknow.
			(Annexure - A1) thereafter NOC for expansion of distillery
			capacity by 85.0 KLPD was granted vide letter no. G/98/7/C-
			5/3(N.O.C.)/6/46 dated 13.08.1999 by Uttar Pradesh Pollution
			Control Board. (Annexure - A2). IGL expanded distillery
			capacity from 205.0 KLPD to 425.0 KLPD in the year 2004. The
			Environment Clearance (EC) for 220.0 KLPD distillery (120.0
			KLPD from Molasses route and 100.0 KLPD from Cane Juice)
	Calycol		was issued by Ministry of Environment & Forest (MoEF), Govt.
			of India, vide Letter No. J-11011/219/2003 - IA II (I), dated 24th
			June 2004 and Environment Clearance for revision of ETP



ii).	Total effluent generation with the approved scheme without reboiler is 4600 m³/d, of which 3900 m³/d is from the molasses based route and 700 m³/d from cane juice process. Effluent generation after installation of RO plant is 3880 m³/d. Out of 3880 m³/d of effluent generation, 1960 m³/d are utilized for ferti-irrigation and remaining 1920 m³/d are composted with press mud. With the present approved scheme, 51% of effluent is treated by ferti-irrigation and 49% by bio-composting.	·	scheme for achieving zero discharge (capacity – 425.0 KLPD) was issued vide Letter No. J-11011/219/2003 - IA II (I), dated 11th July 2006 and both are enclosed as Annexure-A3 & Annexure-A3.1. Distillery based on Cane juice (capacity – 100 KLD) was operated for the period January 2006 to January 2010 along with Molasses based (325.0 KLD) (Cane juice stream was stopped due to viability of product). Production Data April 2020 to September 2020: Alcohol production from Molasses – 133.42 KLPD (Average) Details of Month wise production is enclosed as Annexure – I. Presently it is not applicable due to implementation of Zero Liquid Discharge (ZLD). Ferti irrigation was started from January 2003 to utilize treated distillery effluent as per CPCB Protocol and remain in practice till June 2009. Bio composting was started in April 2003 and remain operational till June 2016. Bio composting operation was stopped w.r.t. ZLD Direction of CPCB/UEPPCB.
iii).	Effluent generation after reboiler from the molasses based operation will be 3250 instead of 3900 m³/d. The effluent from the cane juice based will be 700 m³/d, thus total effluent generation after installation of re-boiler will be 3950 m³/d. Total effluent generation after installation of RO will be 3650 m³/d. With the revised effluent treatment scheme, total effluent generation from molasses and cane juice would be 3650 m³/d i.e. 2950 m³/d from		ETP (Biogas Plant) was installed in the year 1989. Total 12 Nos. of bio-digesters were installed for treatment of raw spent wash in phase manner alongwith Secondary Treatment Plant. Reverse Osmosis Plant was installed in September 2006. However, at present, only two digester are in operation. Biogas is used in production of some value added chemicals at IGL.
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molasses based route and 700 m³/d from cane juice based route. Out of 3650 m³/d of effluent generation, 1800 m³/d will be concentrated in evaporator, 1100 m³/d will be used for ferti-irrigation and 750 m³/d for bio-composting. The revised scheme envisages evaporation of spent wash (49%), utilization of effluent for ferti-irrigation (30%) and bio-composting of spent wash (21%).

operating only two digester. Remaining 10 Nos. of digesters are not in operation. Operation of Multi-effect Evaporator started in December 2007. Ethanol Plant is achieving zero liquid discharge through MEE (Falling Film-03, Forced Circulation-02 & Falling Film-02 as standby) for enhancing the existing capacity) followed by well-designed slop boiler.

Since Ferti irrigation & Bio composting were stopped in June 2009 & June 2016 respectively as per ZLD condition of Distilleries. Therefore presently only Evaporation & incineration process is in practice to achieve ZLD by concentration of Spent wash in Multi effect Evaporator (MEE) followed by Incineration in Slop fired Boiler.

Our Bio-methanation Plant is based on Biphasic Anaerobic Technology (Acid methane segregation process) & it is being closely monitored for efficient & effective Operation. We are operating the Bio gas Plant for 240 m³/day (max.) of spent wash. Bio-methanated wash is also subjected to MEE.

Effluent Data April 2020 to September 2020:-Average Effluent generation - 1069.72 MT/day (@8.02 MT/KL of Alcohol production)

Utilization in Evaporator – 100.00 %

Details as per **Annexure - II**

Brief Summary:

Distillery operation (425.0 KLPD) for the period of 2004 to 2013

Initially IGL has Four routes for treatment & disposal of spent





wash; (i) Biomethanation followed by biocomposting, (ii) Biomethanation, Membrane filtration (RO) followed by biocomposting, (iii) Biomethanation, Evaporation (MEE) and incineration, and (iv) Biomethanation, Aeration followed by Ferti-irrigation for spent wash generated from cane juice processing.

W.r.t. the CPCB Direction dated 30.06.2006 under Section 5 of the Environment (Protection) Act 1986, IGL has install the MEE followed by Incineration Boiler. After installation of Evaporator 45-50% of spent wash treated through Evaporator, 29-30% through two stage activated sludge process followed by Ferti irrigation & remaining 25-27% through RO followed by Bio composting.

IGL had stopped Rab Plant (Cane Juice) in January 2010 hence route no. (iv) not followed.

Distillery based on Cane juice (100 KLD) were operated for the period January 2006 to January 2010 (stopped due to viability of product).

<u>Distillery operation (305.0 KLPD) for the period of 2013 to 2017</u>

IGL had restrict the production capacity to 305.0 KLD equivalent to the installed capacity of spent wash concentration & incineration system (207 KLD) plus biocomposting facilities through bio methanation followed by RO system (98 KLD) (ref CPCB Direction under Section 5 of





the Environment (Protection) Act, 1986, dated 09.05.2013)

IGL had augment the MEE by Forced Circulation system at 4th & 5th Calandria's so that MEE Plant is adequate equivalent to 240.0 KLD of alcohol production Capacity.

Bio-composting facilities through bio methanation followed by RO system (equivalent to 98.0 KLD distillery capacity) was stopped in Jan 2017.

<u>Distillery operation (240.0 KLPD) for the period of 2017 to till date</u>

February 2017 onwards our distillery is being operated on 240.0 KLD distillery capacity as per CPCB/UEPPCB Direction for achieving ZLD through MEE and burning in specially designed boilers.

B. Specific conditions w.r.t. the Environment Clearance (J-11011/219/2003-IA.II DATED 24.06.2004) for Expansion of Distillery Unit (Capacity 425.0 KLPD):

i). The Industry should ensure that the treated effluent and stack emissions from the unit are within the norms stipulated under EPA rules or SPCB, which is more stringent. In case of process disturbance / failure of pollution control equipments adopted by the unit, the respective unit should be shut down and should not be restarted until the control measures are rectified to achieve the desired efficiency.

Steam is being sourced from Slop fired Boiler (Capacity- 50.0 TPH) equipped with ESP. Online continuous emission monitoring system (OCEMS) has been installed also to monitor the Particulate matter (PM) concentration & being accessed through link as under:-

<u>URL:PM_CEMS</u> http://115.114.10.246:8080/enviroconnect

Flow Meter & Web Cameras are installed to monitor operational activities and its connectivity is being accessed at



ii).	The company shall adopt batch type and continuous fermentation technology. Out of the expanded capacity of 220 KLD, 120 KLD shall be manufactured from molasses and 100 KLD from cane juice.	:	CPCB/UKPCB through link as: http://tpro.telsys.in/account/password-reset We are achieving ZLD through MEE & Incineration Boiler. Stack emission monitoring report is attached as Annexure – III Out of the expanded capacity 220.0 KLPD distillery (120.0 KLPD from Molasses route and 100.0 KLPD from Cane Juice). We have adopted Fed Batch Fermentation technology for 325.0 KLD of Molasses based capacity. However our Distillery is operated @240 KLD production capacity as per UKPCB Consent.
iii).	The quantity of spent wash generated from expanded capacity of 220 KLD shall not exceed 2140 m³/d (1440 m³/d from manufacture of 120 KLD of alcohol from molasses, and 700 m³/d from manufacture of 100 KLD of alcohol from cane juice). Out of the 2140 m³/d of effluent generated, 1440 m³/d of effluent after primary treatment (biomethanation), shall be processed through reverse osmosis, and 50 % of the clear effluent recovered (i.e. 720 m³/d) shall be recycled to the process. The remaining 720 m³/d from reverse osmosis shall be stored in a dedicated storage lagoon for RO reject and used for biocomposting. Spentwash storage shall not be for more than 30 days. The entire effluent from cane juice process (i.e. 700 m³/d which is equivalent to 59 KLD of molasses based distillery) shall be treated by secondary aerobic treatment. The treated effluent shall be stored in a separate lagoon, and used for ferti-irrigation.	:	This condition was complied w.r.t. the treatment facility viz. biomethanation, reverse osmosis & biocomposting. Relevant details are explain in Sr. No. A-iii of revised scheme of ETP.



iv).	The company shall achieve zero discharge for the existing distillery capacity of 205 KLD by December 2005, by under taking ferti-irrigation and bio composting, in accordance with the action plan submitted in the affidavit by the company on 22.4.04 to this ministry. The company shall earmark a separate area of 40 acres of land for		This condition was complied accordingly. Presently Zero discharge achieved through MEE & Incineration as per ZLD direction of Distilleries issued by CPCB. Relevant details are explain in Sr. No. A-iii of revised scheme of ETP. Bio composting was in practice since April 2003 and remain
	existing capacity and 21 acres for augmented capacity, for bio composting on the basis of 1250 MT/press mud/acre/cycle, as per the action plan submitted in the affidavit. The quality of manure produced shall meet the CPCB norms.		operational till June 2016. Bio composting operation was stopped w.r.t. ZLD Direction of CPCB/UEPPCB.
vi).	The company shall follow CPCB protocol for ferti-irrigation, and shall accordingly arrange for land requirement of 2344 acres for existing capacity, and 1317 acres for expanded capacity, for ferti-irrigation, as per the action plan submitted in the affidavit. The effluent to be used for ferti-irrigation shall meet the CPCB norms of BOD< 100 mg/L and TDS < 2100 mg/L.	••	Ferti irrigation was started from January 2003 to utilize treated distillery effluent as per CPCB Protocol and remain in practice till June 2009. Company has stopped controlled land application.
vii).	The company shall monitor the soil and ground water quality in the compost and project area on a regular basis and submitted half-yearly reports to SPCB and the Ministry.	:	Soil & Ground water quality is being monitored regularly. The analysis reports are being submitted regularly. (Annexure – IV)
viii).	The distillery shall not be operated for more than 330 days for molasses route, and 240 days for cane juice process, considering that alcohol is produced for captive consumption for production of specialty chemicals.		The distillery is being operated as per the directions.
ix).	In the event of non-availability/less availability of press mud for bio composting, the company shall ensure zero discharge by	:	Presently we are achieving zero liquid discharge through Evaporation (MEE) and Incineration Boiler (equivalent to 240.0



_			,
	adopting either of these measures (a) installing additional RO units; (b) by increasing alcohol production from cane juice process and reducing alcohol production from molasses route; and (c) by increasing ferti-irrigation only for cane juice process. If the company is unable to achieve zero discharge by adopting these measures, the company shall reduce alcohol production proportionately.		KLPD distillery capacity).
x).	The company shall modify the existing anaerobic digesters and rectify the shortfalls in secondary treatment plant.	:	Total 12 Nos. of bio-digesters were installed for treatment of raw spent wash in phase manner alongwith Secondary Treatment Plant. Reverse Osmosis Plant was installed in September 2006. However, at present, only two digester are in operation. Biogas is used in production of some value added chemicals at IGL. Therefore, for supply of biogas to chemical plant IGL is operating only two digester. Remaining 10 Nos. digesters are not in operation. Anaerobic Digesters are operated on a low feed rate (8-10 m³/hr). Biogas is being used as blast gas in Chemical plant (MEG) process.
xi).	As reflected in the EIA/EMP, green belt of adequate width and density shall be provided to mitigate the effects of fugitive emissions all around the plant as per the CPCB guidelines in consultation with the local DFO.	:	Green belt has been developed more than 33% of the land area & it being strengthened regularly by planting new saplings. Approx. 100000 plants have been planted in existing land. The species planted are as per directions of local DFO. No fugitive emissions from the plant. We are regularly assessing the survival rate of the planted saplings & are planting new saplings on regularly basis in consultation with local DFO. Survival rate of the Plants is observed as 80 – 90%. (Annexure – V)



xii).	Occupational health surveillance programme shall be undertaken	:	Occupational health surveillance programme is under practice.
	as a regular exercise for all the employees and their medical		Two Internal Audits per year and Two External Audits in a
	records maintained.		year (by certification body DNV-GL). Additional audits are
			also conducted, as and when required, for customer demand/
			requirements. Details are attached as Annexure -VI.
xiii).	The company shall not commence production for the expanded		A Sub-Committee comprising Sh. R.K. Garg, Dr. P.L. Ahujarai,
	capacity till a Sub-Committee visits the unit to ensure that all		Sh. B.P. Shukla & Sh. Purshotam Sakhare visited the site on 26-
	systems, as stipulated to achieve zero discharge, are in place.		27 May 2006 to ensure that all systems, as stipulated to achieve
			zero discharge, are in place.

GENERAL CONDITIONS:

S.	CONDITIONS	:	COMPLIANCE STATUS
No.			
i).	The project authorities must strictly adhere to the stipulations made by the Uttaranchal Pollution Control Board and the State Government.		IGL is strictly following the stipulations made by UKPCB. Air/Water consent for Ethanol plant for the period April 2018 - March 2023 was granted by UEPPCB, Dehradun. We are submitting the CCA compliance report on quarterly basis. (Annexure - VII). We are adhering all the safety measures at work place alongwith the guidelines to implement strict social distancing and isolation measures to contain the spread of COVID-19 and complying with all the directions as stipulated by the State Govt.
ii).	No further expansion or modifications in the plant should be carried out with out prior approval of the Ministry of		Noted, No further expansion will be carried out without prior approval of MoEF & CC.



	Envisorment and Forests		
	Environment and Forests.		
iii).	Ambient Air Quality Monitoring Station should be set up in the down wind directions as well as where maximum ground level concentration of SPM, SO ₂ , NOx are anticipated in consultation with the State Pollution Control Board	:	Ambient Air Quality Monitoring Stations (05 Locations as Bio Gas Plant – Behind Laboratory, Coal Yard near Slop 2 Control Room, Fire Station, IGL Colony Near STP & Near Main Gate Security Office) are set up in consultation with the State Pollution Control Board and monitoring is being carried out on quarterly basis by NABL/MoEF & CC accredited laboratory. (Details are attached as Annexure – VIII).
iv).	Adequate Number of influent and effluent quality monitoring stations should be set up in consultation with State Pollution Control Board. Regular monitoring should be carried out for relevant parameters.	:	We are achieving ZLD. Flow Meter & Web Cameras are installed to monitor operational activities and its connectivity is being accessed at CPCB/UKPCB through link. Refer Specific conditions details given in Sr. No. B(i).
v).	The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures, etc. on all the sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA rules, 1989 viz. 75 Dba (day time) and 70 dBA (night time).	:	All the measures have been implemented to keep noise levels in and around factory premises within the permissible norms. Noise monitoring is being done regularly by EMD/F&S. (Annexure – IX)
vi).	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA report.	:	All the environmental protection measures and safeguards recommended in the EIA Report have been implemented. (Details are attached as Annexure - X)
vii).	A separate environment management cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions. The	:	Separate Environment Management Division is already in functional. (Annexure - XI).



	project authorities will provide adequate funds both recurring and non recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any purpose.		So far ₹ 140.57 Crores spent as capital expenditure to implement the stipulated conditions. In addition recurring funds are allocated every year to meet the requirement of running plant effectively. Wherever funds required, are easily available. Environment management cell has setup objective agenda for training of plant personnel on Hazardous waste management & review the same for its progress. Its progress report will be provided with compliance report. Recurring cost for environmental management and monitoring functions i.e. Continuous Emission Monitoring System (PM _CEMS) & Data Connectivity Camera-Flow Meters -AMC is Rs. 2.30 Lac/Annum. Public liability insurance is attached as per (Annexure - XII)
viii).	The implementation of the project vis-à-vis environmental action plans will be monitored by Ministry's Regional Office at Lucknow/ State Pollution Control Board, Central Pollution control Board. A six monthly compliance status report along with the monitoring data should be submitted to the monitoring agencies.	•	Last Site inspection was carried out on 24th August, 2020 by Dr. A. Bhardwaj, Scientist C, GOI, MoEF & CC, Regional Office North-Central Zone, 25, Subhash Road, Dehradun. Regular compliance status report is being submitted to RO, MoEF & CC.
ix).	The Project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/Committee and may also be seen at website of the Ministry of Environment & Forests at http://envfor.nic.in. This shall be advertised within seven days from the date of issue of the	:	Already Complied.



	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 shall be		
	forwarded to the Regional Office.		
x).	The project authorities shall inform the Regional Office as well as	:	Financial closure of the project was occurred in December
x).	The project authorities shall inform the Regional Office as well as the Ministry the date of financial closure and final approval of the		Financial closure of the project was occurred in December 2007. We have already informed to the concerned authorities
x).	· ,		1 /
x).	the Ministry the date of financial closure and final approval of the		2007. We have already informed to the concerned authorities



