



Punjab Alkalies & Chemicals Limited

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CIN : L24119CH1975PLC003607, Website : www.punjabalkalies.com



PACL:QCD: EC :2022/ II/ 321

Dated: 17.06.2022

✓ Government of India

Ministry of Environment, Forest and Climate Chang

(IA-II Section)

Indira Paryavaran Bhawan Jorbagh Road, New Delhi - 3

Ref. No. : F.No. IA-J-11011/332/2018- IA II(I) -dtd. 07.01.2020

SUB: STATUTORY COMPLIANCE BASED ON ENVIRONMENTAL CLEARANCE FOR THE EXPANSION OF OUR CHLOR ALKALI PLANT & ESTABLISHMENT OF OTHER PLANTS BY M/S PUNJAB ALKALIES AND CHEMICALS LTD.

This is with reference to the condition imposed in the Environmental Clearance granted by Govt. of India (MoEF) Vide No. . IA-J-11011/332/2018- IA II(I) dated. 07.01.2020 to our ,we are ,hereby, submitting the six monthly compliance report of the conditions imposed the Environmental Clearance for the period 01.10.2021 to 31.03.2022 for further necessary action,please.

It is mentioned here that the six monthly compliance report has been uploaded on the Parvesh Portal of MoEF&CC and on the website of our unit.

It is further mentioned here that till date we have implemented the partial production capacity of caustic soda for which EC was obtained from MoEF&CC i.e we are manufacturing only 500TPD of caustic soda and other allied products out of allowed capacity of 800TPD.

This is for your kind information, please.

Thanking you,

Yours faithfully,

For PUNJAB ALKALIES & CHEMICALS LTD.,

(M P S WALIA)

GENERAL MANAGER(WORKS)

CC : Government of India

Ministry of Environment, Forest and Climate Chang

Integrated Regional Office , Bays No. 24-25 , Dakshin Marg , Sector 31-A,

CHANDIGARH , PIN : 160030

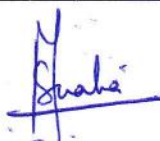
COMPLIANCE REPORT OF EC CONDITIONS FOR THE PERIOD 01.10.2021 TO 31.03.2022
PRODUCTION OF 500TPD OF CAUTIC SODA AND ALLIED PRODUCTS

EC compliance report

For Expansion of:

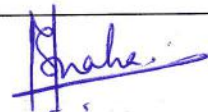
1. Chlor Alkali Plant from 99000 TPA to 264000 TPA.
2. Establishment of Flaker Plant.
3. Establishment of Stable Bleaching Powder Plant.
4. Establishment of Hydrogen peroxide Plant.
5. Establishment of Captive Power Plant.

Sr. No.	EC Conditions /Recommendation	Compliance Status
A.	Specific Conditions:	
i	Solvent management shall be carried out as follows:	
a)	Reactor shall be connected to chilled brine condenser system.	Except water, Since we are not using any kind of Solvent, as such, there is no need to install chilled brine condenser system.
b)	Reactor and solvent handling pump shall have mechanical seals to prevent leakages.	There is no reactor in which organic reacton is carried out and there is no use of any organic solvent for manufacturing of products for which EC has been obtained.
c)	The condensers shall be provided with sufficient HTA and residence time so as to achieve more than 95% recovery.	No such condenser for recovery of any material has been installed in our unit.
d)	Solvents shall be stored in a separate space specified with all safety measures.	There is no use of any kind of organic solvent. However, only FO is used as fuel in the existing boilers, which is properly stored as per PESO guidelines for direct consumption in our existing Boilers.
e)	Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.	Proper earthing is provided as per PESO guidelines for storage of FO.
f)	Entire plant shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.	Entire plant is flame proof. The storage tank of FO is provided with breather valve.
g)	All the solvent storage tanks shall be connected with vent condensers with chilled brine circulation.	There is no use/storage of organic solvents for the products for which EC has been obtained.
ii	Industrial/trade effluent shall be segregated into High COD/TDS and Low COD/TDS effluent streams. High TDS/COD shall be passed through stripper followed by MEE and ATFD (agitated thin film drier). Low TDS effluent stream shall be treated in ETP/RO to meet the prescribed standards.	We have installed an ETP consisting of collection tank, neutralization tank, equalization tank, flash mixer, clarifier, MGF, ACF, DMF, RO feed tank, RO Plant, evaporator and 2 no. sludge drying beds. RO permeate , evaporator condensate and steam condensate is collected in a tank for further using in the cooling tower as make up water.

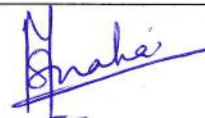


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S. N o.	EC Conditions/Recommendation	Compliance Status
I.	Statutory compliance	
	(i) The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.	<p>Reference to the EC Number: IA-J-11011/332/2018- IA II(I) – dated. 07.01.2020 and subsequently after obtaining CTE from Punjab Pollution Control Board (CTE Number: CTE/Exp/RPN/2021/16314815) we have started construction work for the following projects:</p> <ol style="list-style-type: none"> 1. Caustic Soda Lye Expansion from 300 TPD to 500 TPD completed. <p>And CTO obtained from PPCB having details:</p> <ol style="list-style-type: none"> i) CTO(water)/varied/RPN/2022/17968146 valid till 31.03.2023 and ii) CTO(Air)/varied/RPN/2022/17789314 valid till 31.03.2023 <ol style="list-style-type: none"> 2. Stable Bleaching Powder Plant (100 TPD) 3. 35 MW CAPTIVE Power Plant <p>The work for the said projects (at Sr no 2, 3) is under progress .</p> <p>The total estimated investment for above projects shall be RS 255.58Cr.</p>
	(ii) The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.	<ul style="list-style-type: none"> • Authorization obtained under the HWM Rules,2016,which is valid upto 31.03.2026, for the expansion of Chlor Alkali plant from 300 TPD to 500 TPD . • Varied authorization under the HWM Rules,2016 for other projects for which CTE has been obtained shall be obtained after the start of manufacturing of products therefrom.
	(iii) The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	Complied : as the chemicals covered under the ambit of the Manufacture, Storage and Import of Hazardous Chemicals,1989 are being handled as per the provisions of the said rules .Also the approval of Chief Inspectorate of Factories (Factory License) and Chief Controller of Explosives have been obtained.



II. Air quality monitoring and preservation	
(i) The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 and connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognized under Environment(Protection) Act, 1986 or NABL accredited laboratories.	Complied with for the existing operational plant of 500 TPD Chlor Alkali as the industry has installed OCEMS on the stack of HCl Plant and Sodium Hypo Plant for monitoring of HCl mist (vapours) and Chlorine gas parameters ,which is connected with the server of PPCB/CPCB.
(ii) The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognized under Environment (Protection) Act, 1986.	Complied with as we have installed 22no. of sensors to monitor the leakages of chlorine gas in the plant area, which can detect chlorine to the level of 100.0 µg/Nm ³ . (0.10 mg/Nm ³).
(iii) The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of120°each), covering upwind and downwind directions.	We have installed three HVS at different locations inside the industrial premises to monitor the ambient air quality, which are being operated on regular basis to monitor PM, Chlorine and HCl-Vapours in ambient air. In addition PPCB has installed RDS to monitor PM,SO ₂ ,chlorine and NO _x in ambient air in the premises of our unit. This data is being uploaded by the PPCB on its website.
(iv) To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. Sulphur content should not exceed 0.5% in the coal for use in coal fired boilers to control particulate emissions within permissible limits (as applicable). The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.	There are only fugitive emissions of chlorine from different sections, which are collected by providing hoods attached to a common duct which eventually leads to chlorine neutralizer. The work for installation of captive Power Plant based on Coal/ bio mass as fuel, is still under way. The compliance with regard to sulphur contents in the coal as fuel, shall be ensured during operation phase of this plant.
(v) Storage of raw materials, coal etc shall be either stored in silos or in covered areas to prevent dust pollution and other fugitive emissions	Common Salt is the raw material, which is stored in a shed. There is no use of coal as a fuel for the present production. However, coal will be used as fuel in the co-generation power plant, which will be stored in a shed to rule out the possibility of generation of any kind of fugitive emissions.
(vi) National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R. 608(E) dated 21st July, 2010 and amended from time to time shall be followed.	Our is a chlor alkali plant for which industry specific effluent/emission standards have been laid down by the MoEF&CC, which are being complied with in letter and



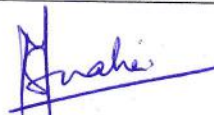
		spirit.
	(vii) The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with.	Compliance of the National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 is being ensured in letter and spirit.
III.	Water quality monitoring and preservation	
	(i) The project proponent shall provide online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises.	The industry has installed Online continuous Emission monitoring system (OCEMS) at the pipeline through which Treated Waste water is being Re-used back into the processes and data of the same is being transmitted to the portal of CPCB and PPCB.
	(ii) As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.	Complied. We are a ZLD plant and are maintaining our ZLD status and no waste/treated water is being discharged outside the premises.
	(iii) Total fresh water requirement shall not exceed 11936 cum/day, proposed to be met from Irrigation Department, Government of Punjab. Prior permission in this regard shall be obtained from the concerned regulatory authority.	Only surface water from river Sutlej is taken to meet the water supply demand and permission in this regard has been obtained from Department of Water Resources. A copy of the said permission is attached herewith.
	(iv) Process effluent/any wastewater shall not be allowed to mix with storm water .The storm water from the premises shall be collected and discharged through a separate conveyance system.	In order to collect the storm water, a garland drain has been constructed. The process effluent/ wastewater is conveyed to collection tank through pipeline, to rule out the possibility of mixing of process water/wastewater from surface run-off.
	(v) The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.	Assured to comply. Implementation of Rainwater harvesting system has been started for collection of rain water from the roof tops of new buildings which are under constructions.
	(vi) The DG sets shall be equipped with suitable pollution control devices and the adequate stack height so that the emissions are in conformity with the extant regulations and the guidelines in this regard.	All the DG sets are equipped with proper canopies and stacks of adequate heights. The stack monitoring of DG Sets is not required as running hours are negligible.
IV.	Noise monitoring and prevention	
	(i) Acoustic enclosure shall be provided to DG set for controlling the noise pollution.	Proper acoustic enclosures have been provided to DG set for controlling the sound pressure level.



	(ii) The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation.	The overall noise levels in and around the plant area is well within the standards by providing noise control measures including acoustics.
	(iii)The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.	Noise levels at the prominent places of the unit are being monitored at regular basis and are found within the prescribed standards.
V.	Energy Conservation measures	
	(i)The energy sources for lighting purposes shall preferably be LED based.	Complied with as LED based lighting system has been provided.
VI.	Waste management	
	(i)Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame Arrester shall be provided on tank farm and the solvent transfer through pumps.	Hazardous chemicals are being stored in the specified tanks ,which are provided with necessary flame arrester system.
	(ii) Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.	The brine sludge is stored in the earmarked area and is used for landfilling being non-hazardous in nature. Possibility is being explored to manufacture bricks as per SOP framed by the CPCB. The ETP sludge is given to the operator of the common TSDF and Used oil is given to the registered recycler.
	(iii) The company shall undertake waste minimization measures as below:- (a) Metering and control of quantities of active ingredients to minimize waste. (b)Reuse of by-products from the process as raw materials or as raw material Substitutes in other processes. (c) Use of automated filling to minimize spillage. (d)Use of Close Feed system into batch reactors. (e)Venting equipment through vapour recovery system. (f) Use of high pressure hoses for equipment clearing to reduce waste water generation.	Efforts are being made on regular basis to minimise the waste generation by recycling and reuse etc.
VII	Green Belt	
	(i).The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State	Complied with: At present, green belt will be provided in 33 % of the total plant/project Area. As on date 8140 tress have been planted as compared to 1978 tress at the time of obtaining EC. Total 19185 trees were to be planted as per EC. The

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	Forest Department.	balance 11045 trees will be planted in the coming monsoon season.
VII	Safety, Public hearing and Human health issues	
	(i) Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	Hazard Identification and Risk Assessment (HIRA) and Disaster Management Plan are already in place. We have already submitted copies of the on-site emergency plan, off-site emergency plan and Disaster Management Plan to the Regional Office of MoEF&CC at Chandigarh.
	(ii) The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.	Adequate Fire fighting system is available along with fire hydrants, extinguishers etc, duly approved by Third party.
	(iii) The PP shall provide Personal Protection Equipment (PPE) as per the norms of Factory Act.	Complied with. All the PPE have been issued to individual employee as per Factory Act,1948 and all the workers are only allowed in the working area with Personal Protection Equipment (PPE) as per the norms of Factory Act.
	(iv) Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Time to time training is being imparted to the workers regarding safety and health aspects. Their pre-employment medical check up and routine medical check up is mandatory. Accordingly medical check up of all employees is carried out once in a year and those working in hazardous areas are covered twice in a year.
	(v) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Complied with as all the requisite facilities for the labour deployed in construction activities, are provided.
	(vi) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Complied with as Occupational health surveillance of the workers is being done on a regular basis and records in this regard is being maintained as per the Factories Act,1948.
	(vii) There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished products, and no parking to be allowed outside on public places.	Complied with as there is adequate parking space is available in the premises of the unit.
IX.	Corporate Environment Responsibility	
	(i) As proposed, Rs.8 Crore shall be allocated for Corporate Environment Responsibility (CER). The CER plan shall be implemented during the plant construction stage and before commissioning of the project.	Out of Rs.1240 Crore originally planned, presently undertaken projects worth Rs.255.58 Crore. As per balance sheet and audited report the total amount spent on the projects under construction is Rs.166.87 till 31.03.2022 for which CER spending comes out to be Rs.1.077 Crore on pro-rata basis (i.e. Rs.8.00 Crore has to be spent on CER for project worth Rs.1240 Crore)



		against which Rs.1.08 Crore has been spent on CER activities.
	(ii) The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation Norms/conditions and/or shareholders/stake holders. The copy of the board resolution in this regard shall be submitted to the MOEF & CC as a part of six-monthly report.	Complied as the company has prepared environmental policy, which has been duly approved by the Board of Directors. This policy contains SOPs for proper checks and balances and to bring into focus the environmental concerns. Environment policy duly signed by competent authority is attached.
	(iii) A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	Environmental Management Cell has been set up both at HO and site under the control of Sr. Executive. A) AT HO : 1. Sr. Vice President 2. Chief Financial Officer B) AT SITE 1. GM (Works) 2. DGM (Works) 3. DGM (Projects) 4. DM (Env.&Pollution Control)
	(iv) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.	Complied with. For the present production capacity, the compliance of EMP has been done and for the remaining capacity to be implemented, the compliance of EMP shall be ensured.
	(v) Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	Compliance of this is being ensured. Regular audit from third party is being got done.
X.	Miscellaneous	
	(i) The project proponent shall make public the environmental clearance granted for their project	Complied with: An advertisement was published in two news papers on 12.01.2020 regarding the EC granted by

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<p>along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.</p>	<p>the MoEF&CC was published.</p>
<p>(ii) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayat and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt</p>	<p>Complied with</p>
<p>(iii) The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.</p>	<p>Complied: with: Half yearly compliance report of EC conditions is being prepared and submitted to the MoEF&CC/PPCB on regular basis.</p>
<p>(iv) The project proponent shall monitor the criteria pollutants level namely; PM-10, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.</p>	<p>We have installed three HVS at different locations inside the industrial premises to monitor the ambient air quality, which are being operated on regular basis to monitor PM,SO₂,chlorine and NO_x in ambient air.</p> <p>In addition PPCB has installed RDS to monitor PM,SO₂,chlorine and NO_x in ambient air in the premises of our unit. This data is being uploaded by the PPCB on its website.</p> <p>The data for disclosure to the public has been displayed at a convenient location at the Factory Main Gate and also put on the website of the company.</p>
<p>(v) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.</p>	<p>Complied as Half yearly compliance report of EC conditions is being prepared and submitted to the MoEF&CC/PPCB and same was uploaded on the company's website and also submitted on MoEF Portal (parivesh).</p>
<p>(vi) The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.</p>	<p>Complied as Environmental statement in Form-V is being prepared every year and submitted to the PPCB and same was uploaded on the company's website.</p>
<p>(vii) The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the</p>	<p>Being Complied as the project is still under execution / construction stage. Project financial closure and its approval by concerned authorities will be informed on</p>

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land development work and start of production operation by the project.	actual basis after the completion of the project.
(viii) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	All PPCB Directions complied.
(ix) The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Complied as we are agreeing to comply.
(x) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change.	Complied as we are agreeing to comply.
(xi) The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.	Complied Proper cooperation was provided and will be during the visits.

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PUNJAB ALKALIES & CHEMICALS LIMITED

CORPORATE ENVIRONMENT POLICY

PACL recognizes that effective environment management is fundamental to our business. We shall strive to integrate sound business practices across PACL's management and governance systems to minimize environmental impacts and attain a leadership position in environmental stewardship.

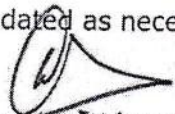
This Policy is applicable to all businesses of PACL.

PACL is committed to sustainable development and to achieve that we shall:

- Comply with all applicable regulatory and legal requirements;
- Work towards building a responsible business beyond the existing laws and regulatory frameworks;
- Take initiatives towards efficient use of natural resources and energy, protecting biodiversity in our area of influence, reduction and prevention of pollution, promoting waste avoidance and recycling measures in line with internationally disseminated technologies and practices;
- Encourage research and development for identifying innovative ways to avoid, minimize and mitigate adverse environmental impacts at every stage of our operation;
- Continually improve environmental performance of current and future products, services and infrastructure of the PACL businesses;
- Develop, implement and maintain an internationally accepted environmental management system in our operations and new projects;
- Influence our contractors and suppliers to adopt the PACL's environmental policy and practices and encourage appropriate environmental management across the supply and value chain;
- Enhance environmental awareness through participation and consultation with internal and external stakeholders by training and maintaining effective channels of communication; and
- Monitor, measure, report the progress on performance of environmental conservation and management initiatives in compliance with internationally recognized protocols and communicate approach and achievements to relevant stakeholders.
- Undertake internal and third-party audits at regular intervals to assess the environmental performance to evaluate the environmental risk and subsequent mitigative actions.

This policy will be reviewed periodically for its suitability and will be updated as necessary.

Date of Approval: 11.11.2021


(Naveen Chopra)
Managing Director