Plain Language Summary for New Source Review (NSR) Initial Application for Air New Source Review Permit Number 174275, PSDTX1628 and GHGPSDTX234

All air permit applications subject to the public notice requirements of 30 Texas Administrative Code (TAC) Chapter 39 must prepare and submit to the TCEQ a plain-language summary of the application. The summary must be provided in English and the alternative language as required by 30 TAC § 39.426, if applicable.

Ingleside Clean Ammonia Partners, LLC (CN606190668) has submitted an application for an initial permit. The Ingleside Blue Ammonia (RN111826111) plant will produce/manufacture blue ammonia at 1450 Lexington Blvd, Ingleside, San Patricio County. Producing blue ammonia is a low-carbon alternative to traditional ammonia manufacturing methods. Blue ammonia utilizes carbon dioxide (CO_2) capture, permanent sequestration, and storage technologies.

This permit will authorize two blue ammonia production trains, which will include gas-fired boilers and process heaters, hydrogen production and ammonia synthesis equipment, cooling towers, sulfur removal equipment, atmospheric storage tanks, refrigerated ammonia storage tanks, flares (control devices), wastewater treatment facilities, emergency engines (fire water pumps and generators), and fugitive components (e.g., pumps, valves, connectors, flanges). The two trains each will have the capacity to produce 4,000 metric tons per day of blue ammonia, which will use sweet natural gas as the raw material.

Ingleside Clean Ammonia Partners, LLC has listed in the application the pollutants and amounts that will be emitted for each facility. Below is the total amount for each pollutant that is proposed to be emitted each year for all the facilities.

Pollutant	Proposed Emissions (tons per year)
Volatile Organic Compounds (VOC)	33.22
Oxides of Nitrogen (NO_X)	90.13
Carbon Monoxide (CO)	216.97
Particulate Matter (PM)	183.71
PM less than 10 Micrometers in Diameter (PM_{10})	13.09
PM less than 2.5 Micrometers in Diameter ($PM_{2.5}$)	12.37
Sulfur Dioxide (SO_2)	3.86
Hydrogen Sulfide (H_2S)	0.87
Ammonia (NH_3)	66.27
Hazardous Air Pollutants (HAP)	8.73
CO_2 Equivalents (CO_2e)	3,376,116.96

The new facilities will be controlled by the following equipment:

- <u>Cooling towers</u> – use of "drift eliminators," which reduce the amount of water that leaves the top of the cooling towers as mist. The mist can contain dissolved solids, which would become particulate matter when the water evaporates, leaving only the solids behind. The drift eliminators reduce the solids emitted from the cooling towers.
- <u>Auxiliary boiler (for steam generation)</u> – use best available low NO_X combustion/control technologies which may include one or more of the following: low-NO_X burners, flue gas recirculation, and/or post-

combustion controls.

- Sulfur removal equipment – use hydrogen to remove the sulfur from the feed stream by joining the hydrogen with the sulfur into a different molecule, followed by a catalyst (something to act like a sponge) to absorb this new sulfur molecule so that it is not released to the atmosphere.
- Process heaters and steam superheaters – use selective catalytic reduction (SCR), which means that before being emitted, the exhaust gas is mixed with a catalyst (something to assist the reaction) and ammonia to cause a chemical reaction that produces cleaner emissions of mostly nitrogen and water.
- Hydrogen production and ammonia synthesis equipment – process equipment such as reactors, separation columns, and other vessels do not routinely vent to atmosphere. During necessary but infrequent start-up, shutdown, or maintenance operations, these units will vent to the plant's flares, which are described below. Hydrogen production includes a step for removing CO_2, which will vent to atmosphere during startup (larger stream, brief time) and routinely (smaller stream, continuous). There also may be venting to atmosphere of the CO_2 stream for periods when the third-party carbon capture and sequestration infrastructure is not available.
- Flares (control devices) – used to control gases from the production trains during plant maintenance, start-ups and shutdowns, which are expected to be infrequent. Gases from the trains will be piped to the flares, which is where the gases will be burned to lower the amount of process pollutants going into the air.
- Atmospheric storage tanks – Tanks will be painted white to assist in minimizing the temperature of the liquids inside, which will limit the amount of stored liquid that could turn into vapor. Liquids will also be added to the tank using a submerged-fill pipe, which means that the pipe used to fill the tank will add liquid to the tank below the liquid surface. This method of tank filling reduces splashing, so less liquid is exposed to air, which could turn into vapor and be emitted from the tank.
- Refrigerated ammonia storage tanks – use a "boil-off gas" system (BOG), which will capture ammonia that has turned into gas, cool it, compress it from gas to liquid, then return it to the storage tank and prevent ammonia emissions. The tanks will be refrigerated to -28°F, below the boiling point of ammonia, and are double-walled to provide additional ammonia containment.
- Wastewater treatment facilities – Wastewater from the site will be collected and treated in a series of storage and treatment vessels to remove pollutants before discharging the water. As part of this system, production area storm water from the beginning of a storm will be collected and treated along with the site's wastewater to remove chemicals that may have gotten into the storm water as it flowed through the plant.
- Emergency engines (fire water pumps and generators) – use EPA-certified engines to keep emissions from the engines as low as practicable.
- Fugitive components – to identify if there are leaks, or "fugitive emissions," from piping components such as valves, connectors, pumps, and similar equipment, several methods are used. For VOCs and GHGs, the project will conduct periodic instrument monitoring. Using a calibrated hand-held instrument, personnel will check for fugitive emissions by holding the device near each piping component to measure for potential leaks of materials that can be detected by such instruments, specifically organic materials. For ammonia, and as a backup for VOCs and GHGs, plant personnel will also conduct walkthroughs multiple times per day using instruments and observations to confirm the integrity of plant operations. Both of these methods are designed for early detection and repair of potential leaks, thus reducing the duration of such leaks, resulting in a reduced potential for emissions from this equipment.