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OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MEMORANDUM **April 1, 2021**

TO: Phillip Fielder, P.E., Chief Engineer

THROUGH: Rick Groshong, Environmental Manager, Compliance and Enforcement

THROUGH: Eric L. Milligan, P.E., Manager, Engineering Section

THROUGH: Jian Yue, P.E., New Source Permits Section

FROM: David Schutz, P.E., New Source Permits Section

SUBJECT: Evaluation of Permit Application No. **2016-1295-C (M-8)**
Koch Fertilizer Enid, LLC
Koch Fertilizer Plant (FAC ID 635)
Enid, Garfield County, Oklahoma
Expansion of No. 2 Urea Plant ("UR2 Improvements Project")
1619 South 78th
Sec. 17 – T22N – R5W
Five Miles East of Enid on Highway 64, One Mile South on County Road
Latitude 36.37700^{o}N, Longitude 97.76500^{o}W

SECTION I. INTRODUCTION

Koch Fertilizer Enid, LLC (KFE) operates an ammonia products and nitrogen fertilizer plant (SIC 2873) located approximately five (5) miles east of Enid, Oklahoma. The facility is currently operating as authorized by Permit No. 2016-1295-TVR2 (M-5) issued on June 16, 2020. The facility was also issued a series of Prevention of Significant Deterioration (PSD) construction permits for a major expansion to the facility (initial construction of the No. 2 Urea Plant), starting with Permit No. 2011-441-C (M-2)(PSD), issued on May 29, 2014, through Permit No. 2016-1295-C (M-5)(PSD) issued May 14, 2019. In addition, the facility was issued Permit No. 2016-1295-C (M-6) on February 19, 2020, for improvements to the No. 2 Urea Plant ("UR2 Improvements Project"). The facility wishes to modify the UR2 Project construction permit as follows:

- Instead of a 225 MMBTUH boiler, the facility will install an 85 - 95 MMBTUH boiler; for worst-case emissions estimates, 99.9 MMBTUH was used. The alternate boiler will be subject to NSPS Subpart Dc instead of NSPS Subpart Db. There will be a reduction in monitoring, reporting, and recordkeeping requirements since Continuous Emissions Monitoring Systems (CEMS) are not required under Subpart Dc. That boiler will remain in EUG-23.

- Instead of installing a new cooling tower supporting the No. 2 Urea Plant, an existing cooling tower will be enlarged to a circulation of 80,000 GPM with 0.0005% drift and 3,300 ppm total dissolved solids (TDS). The modified cooling tower remains in EUG-25.

- The facility will update the conditioning agent used. Usage will approximately double in the two storage tanks. While methanol was initially estimated at 0.05% by weight annual average for the No. 1 Urea Plant storage tank, and 0.07% by weight annual average for the No. 2 Urea Plant storage tank, annual emissions will now be calculated using 0.12% annual average for both tanks. Short term estimates were previously based on 0.20% by weight for the No. 1 Urea Plant storage tank and 0.10% by weight for the No. 2 Urea Plant storage tank; hourly maximum emissions will now be calculated using 0.20% short-term basis for both tanks. New maximum anticipated throughputs are 1,410,528 gallons/year for the No. 1 Urea Plant tank and 2,097,774 gallons/year for the No. 2 Urea Plant tank. The No. 1 Urea Plant conditioning agent storage tank is in EUG-5, while the No. 2 Urea Plant conditioning agent storage tank is in EUG-17.

- An additional tank for diesel exhaust fluid urea solution (DEF-US) was constructed. That tank will be in EUG-17 (Insignificant Activities).

- Since there is increased conditioning agent usage, there will be increased VOC emissions from the urea granulators (EUG-6 for Urea Plant No. 1 and EUG-22 for Urea Plant No. 2).

As described in the initial application for the UR2 Improvements Project, the facility produces anhydrous ammonia among other products. Historically, ammonia has been shipped from the facility by truck, rail, and pipeline. The pipeline is currently shutdown. The facility plans to upgrade the No. 2 Urea Plant so that ammonia formerly shipped by pipeline may be converted to solid urea ($CO(NH_2)_2$) by reaction with carbon dioxide (CO_2). The No. 2 Urea Plant will be expanded from its current capacity of 2,900 TPD to 3,600 TPD, Diesel Exhaust Fluid Urea Solution (DEF-US) will be expanded to an annual capacity of 220,000 TPY, there will be increased production in the No. 2 Urea Plant granulation section to 3,390 TPD. The following physical changes will be made to the plant to accomplish the capacity increase:

- <u>New Unit</u>

Only one new unit will be constructed: a new No. 2 Urea Plant Boiler 2 (99.9 MMBTUH) in EUG-23.

- <u>Modified Units</u>

The existing No. 2 Urea Plant Cooling Tower 2 in EUG-25 will be modified such that its circulation rate capacity will become 80,000 GPM with a drift of 0.0005%

With installation of the new No. 2 Urea Plant Boiler 2, more reliable steam will be provided to the No. 1 Urea Plant which may result in increased urea production. The application estimated three days' annual production increase in the No. 1 Urea Plant. Additionally, KFE conservatively included a potentially substantially related project (expanding the cooling tower for the No. 1 Urea Plant, increasing that plant's capacity) involving modifications to the No. 1 Urea Plant granular storage, handling and loading area that may increase projected and Potential-to-Emit (PTE) emissions in that area (EUG-14); those emissions were incorporated in the major NSR applicability analysis and the project remains below PSD thresholds. Since the project will include modifications to this area, EUG-14 is considered a modified unit.

The No. 2 Urea Plant Granulator (EUG-22) will have physical modifications made to increase its capacity to handle the increased production of granulated urea. With increased conditioning agent usage and higher VOC in the conditioning agent, VOC emissions will increase.

The project includes potential upgrades to the pumping equipment at the DEF-US storage tanks, LS-TK-4 and LS-TK-11 (EUG-17, "Insignificant Activities"), to provide additional backup capability. The increase in the capacity of the No. 2 Urea Plant Synthesis section will allow for the increase in the amount of DEF-US material stored and loaded out.

Modifications to No. 1 Urea Plant storage, handling, and load-out areas are being considered to improve product management and loading. There will be small emission changes in EUG-14 if the contemplated physical changes are made.

In addition to the changes noted above, KFE is planning to complete cooling tower circulation pump motor upgrades for the No. 1 Ammonia Plant (EUG-17) and No. 2 Ammonia Plant Cooling Towers (EUG 17), which will increase cooling tower water circulation rates and result in a projected emissions increase at these sources. This applies to the two pumps on the No. 1 Ammonia Plant Cooling Towers and the two pumps on the old cells of the No. 2 Ammonia Plant Cooling Towers. No changes are being made to the circulation rate for the No. 2 Ammonia Plant Cooling Tower new cells.

- Shutdown Unit

The existing No. 1 Ammonia Plant Start-up Boiler (EU 2202UB in EUG-3) will be shut down upon start-up and shakedown of the proposed No. 2 Urea Plant Boiler 2.

- Existing Units with Associated Emissions Changes

With installation of the new No. 2 Urea Plant Boiler 2 providing start-up steam to the Ammonia Plants, a small increase in ammonia production is anticipated for times when production is steam-limited. The No. 1 Urea Plant may also have an increase in production due to the better steam supply. The application estimated three days' annual production increase in the No. 1 Urea Plant. Therefore, there will be small but finite emissions increases in the following units:

Ammonia Plant #1 Primary Reformer (EUG-2)
Ammonia Plant #2 Primary Reformer (EUG-2)
No. 1 Urea Plant Conditioning Agent Storage Tank (EUG-5)
No. 1 Urea Plant Granulators (EUG-6)
No. 1 Urea Plant Synthesis Vents (EUG-7)
No. 1 Urea Plant Fugitives (Storage, Handling, and Loading) (EUG-14)
No. 1 Urea Plant Haul Roads (EUG-17)

Increased urea production will result in increased emissions in the following units in the No. 2 Urea Plant:

No. 2 Urea Plant Boiler 1 (EUG 23)
No. 2 Urea Conditioning Agent Storage Tank (EUG 17)
No. 2 Urea Plant Fugitive PM (Materials Storage, Transfer and Loading) (EUG 26)
No. 2 Urea and DEF-US Haul Roads (EUG 27)

The No. 1 Ammonia Plant Cooling Tower (EUG 17), No. 2 Ammonia Plant Cooling Tower (EUG 17) and the No. 1 Urea Plant Storage, Handling and Loadout fugitives (EUG 14) emit only PM, PM_{10}, $PM_{2.5}$ and will have an increase in both design capacity and PTE. The No. 1 Urea Plant Conditioning Agent Storage Tank (EUG 5) emits only VOC, and will have an increase in PTE. Therefore, the 10-year post-project recordkeeping will be required for particulates (PM, PM_{10}, $PM_{2.5}$) and VOC, and the 5-year timeframe applies to all the other regulated PSD pollutants (e.g., NOx, SO_2, CO, Pb).

The changes proposed will result in lower emissions than were initially authorized in Permit No. 2016-1295-C (M-6), but since there is a reduction in monitoring, reporting, and recordkeeping due to a different NSPS subpart being applicable (Subpart Db requires CEMS for NOx but Subpart Dc does not), the revisions constitute a "significant" modification and Tier II processing will be conducted.

Since the facility emits more than 100 TPY of a regulated pollutant, it is subject to Title V permitting requirements. Emission units (EUs) have been arranged into Emission Unit Groups (EUGs) in Section III.

SECTION II. FACILITY DESCRIPTION

Construction of the plant began in 1973. The operations at the site are currently split into seven distinct "plants:" the two (2) ammonia plants (1,700 TPD capacity for Plant 1 and 2,900 TPD for Plant 2), the two (2) urea plants, the urea ammonium nitrate (UAN) plant, the vapor CO_2 plant, and the hydrogen recovery unit (HRU) plant. The CO_2 plant is operated by KFE, but owned by another entity. Additionally, a contractor owns, operates and maintains a portable ammonium polyphosphate process unit that is also used on-site on a seasonal basis. The primary raw materials for the process are methane and nitrogen, producing ammonia, urea, nitric acid, and urea-ammonium nitrate. The facility operates process units that conduct the following operations:

- Natural Gas Desulfurization: Raw materials used for the production of ammonia are natural gas, water and air. After natural gas enters the plant, the natural gas stream is split. A portion of the stream is used to fuel various combustion sources. The remainder of the stream is directed to the desulfurization unit. The desulfurization unit uses a cobalt-molybdenum or nickel-molybdenum catalyst followed by a zinc catalyst to "sweeten" or remove sulfur compounds from the natural gas. These sulfur compounds would otherwise poison subsequent catalysts.

- Catalytic Steam Reforming: Steam reforming is the process by which hydrogen gas is produced and nitrogen is added. Steam reforming takes place in two steps: primary reforming and secondary reforming. In the Primary Reformer, steam (H_2O) is reacted with methane (CH_4) to form carbon monoxide (CO), carbon dioxide (CO_2), and hydrogen (H_2) in the presence of a nickel-based reforming catalyst. H_2 will be used later to react with N_2 to produce ammonia (NH_3). A gas-fired boiler (EU-2202UB) rated at 144 MMBTUH is currently used to generate supplemental steam for both units; that boiler is being shut down and steam will be provided by the new No. 2 Urea Plant Boiler 2 in the current project. In the Secondary Reformer, air is added to the process stream, which provides nitrogen (N_2) and oxygen (O_2). The ratio of air is carefully controlled to provide the correct mixture of N_2 and H_2 to obtain the optimum yield from the reaction. The stream leaving the Secondary Reformer is cooled in a waste heat boiler as it exits the reformer. The emission units within this part of the process represent the combustion emissions from Primary Reformers and Auxiliary Boilers, and are identified as EUG-2.

- Carbon Monoxide Shift: The shift converter consists of two converter systems: high temperature shift (HTS) and low temperature shift (LTS). The objective of the shift converters is to “shift” as much CO to CO_2 as possible. In the shift converters, CO is reacted with H_2O to form CO_2 and H_2. The unreacted water vapor is then condensed and removed from the process gas stream. The stream is now referred to as “synthesis gas.” The raw synthesis gas passes into the CO_2 Absorber for the initial synthesis gas purification step. The LTS catalyst produces a small amount of methanol, as a byproduct, which contributes to potential methanol emissions at the plant. KFE, however, utilizes a low methanol producing catalyst designed to minimize methanol formation.

- Carbon Dioxide Removal: In the CO_2 Absorber, the synthesis gas stream flows upward and passes through packed beds, which promote close contact of the synthesis gas with a down flowing unsaturated (lean and partially unsaturated (semi-lean)) solution of potassium carbonate and potassium bicarbonate (Benfield solution). The Benfield solution absorbs the CO_2 from the synthesis gas stream to form potassium bicarbonate. The Benfield solution is regenerated by flashing into the CO_2 Stripper Towers (EU-1102E1 and EU-1102E2). The absorber overhead flows to the CO_2 Absorber knock out drum for removal of any entrained Benfield solution. The synthesis gas leaving the knock out drum then passes through heat exchangers to be preheated before flowing to the inlet of the Methanator. The stripped CO_2 leaves the top of the stripper and is sent to the urea and urea ammonium nitrate plants or is sold as product to various customers. Daylight Petroleum, an independent company not related to KFE, purchases some of the CO_2 from this point and it is processed in their on-site Carbon Dioxide Plant. Any remaining CO_2 not used or sold as product is vented to the atmosphere.

- Methanation: At this point in the process, the synthesis gas contains mostly H_2 and N_2 with residual amounts of CO and CO_2. The Methanator catalyst reacts the remaining carbon oxides with hydrogen to form methane and water. Methanation is required to remove the remaining CO and CO_2, which could poison the ammonia synthesis catalyst.

- Ammonia Synthesis ($3H_2 + N_2 \rightarrow 2NH_3$): The stream from the Methanator is cooled in a series of steps and is then compressed. Compression of the purified synthesis gas is the first step in the liquid ammonia production phase of the process. Prior to the final compression stage, a stream of recycled synthesis gas, containing ammonia, is combined with the stream. The high-pressure synthesis gas leaves the after-coolers of the compressors and is cooled further in two parallel streams. Ammonia from the recycle stream condenses out in the chillers and is sent to storage. The synthesis gas continues on to the inlet of the Ammonia Converter. In the converter, N_2 reacts with H_2 to form ammonia (NH_3).

  The converter effluent purge gas is sent to the Hydrogen Recovery Unit for ammonia removal. In the event of unanticipated outages, the ammonia-laden purge gas is sent to the flare. Liquid ammonia from the purge separator is routed to the refrigeration system for recovery. Each converter is equipped with a natural gas fired start-up heater (EUG 4) rated at 33 MMBTUH. The start-up heater is used to heat the converter up to reaction temperature during start-up.

  The plant operates two (2) atmospheric cold storage tanks and two (2) pressurized bullet tanks for ammonia storage. Some of the ammonia is loaded into trucks and railcars (EU-AMH) for transport to consumers. A flare (EU-2220U) is used to combust ammonia or hydrocarbons during loading, unloading and maintenance/startup/shutdown operations and to combust process gas (containing ammonia, hydrocarbons, hydrogen, etc.) from various relief valves throughout the plant. A separate flare (EU-2121U) is used for the cold storage tanks.

- Hydrogen Recovery Unit (HRU): The HRU plant processes the High Pressure and Low Pressure Purge streams that are removed from the Ammonia processes to prevent the accumulation of non-reacting compounds such as methane and argon. After scrubbing with water to remove ammonia, a Prism Membrane unit removes hydrogen from the High Pressure Purge Gas streams. The recovered hydrogen is recycled back to the compressors in the Ammonia Synthesis section. The scrubbed Low Pressure Purge streams and the Prism unit reject stream are combined and sent to the Purge Gas fuel header.

- No. 1 Urea Synthesis (No. 1 Urea Plant): The urea plant receives CO_2 directly from the ammonia plants and ammonia from the pressurized ammonia storage tanks. The CO_2 feed is compressed to synthesis pressure using a steam driven compressor and the ammonia is pumped to the synthesis pressure, and both are fed into the urea synthesis section (EUG 7). Condensate from the compression of CO_2 is sent to the Process Condensate Stripper (EU-308E). The reactants form ammonium carbamate, which dehydrates to urea. Excess water from the urea synthesis process is sent to the No. 1 Urea Plant Wastewater Concentrator (EUG 8).

- No. 1 Urea Evaporation: Target urea concentration is accomplished through the use of the evaporation section in two (2) steps. Before going through the evaporation section a portion of the liquid urea solution may be diverted for sale as a urea solution or may be used in the urea ammonium nitrate (UAN) product. The urea solution flows through the First Stage Evaporator where it is heated and system pressure is lowered resulting in an increased urea purity/concentration. The urea solution then passes through the Second Stage Evaporator where the urea concentration is further increased. The solution is now referred to as the "urea melt." The urea melt is delivered to the granulation step for additional processing. A portion of the urea melt may be transferred to No. 2 Urea Plant for granulation. The evaporation process requires heat, which is provided by steam from two (2) natural gas fired boilers (EU-403A and EU-403B) rated at 84 MMBTUH each. The steam they produce is used in the synthesis step, in the evaporation step, and in the CO_2 compressor. The heat is also required to keep the refined urea in a molten state for the next step in the process.

- No. 1 Urea Granulation: A conditioning agent is added by direct injection to the urea melt to form methylenediurea. The conditioning agent is stored in the conditioning agent storage tank (EU-D202) prior to use. The conditioning agent reacts with the urea to reduce caking during storage and to reduce dust formation during material handling. Granulation currently takes place in three (3) rotating drums. The hot urea melt is sprayed into rotating drums (urea granulators) filled with solid urea granules. The urea spray coats the smaller granules in the drum. Cool air is used in a counter flow to the spray to cool and solidify the urea granules. The urea granulators (EU-K201A, EU-K201B, EU-K201C) each utilize a wet scrubber for the recovery of product and reduction of PM emissions. The solid urea is screened for size and sent to product storage via an enclosed belt conveyor. The material is transported in bulk via trucks or railcars. KFE occasionally produces granular products with additional additives for specialized product properties. The additives are incorporated into the urea melt upstream of the granulators and do not significantly change the quantity of PM emissions.

- No. 2 Urea Synthesis (No. 2 Urea Plant): The urea plant receives CO_2 directly from the ammonia plants, and ammonia from the pressurized ammonia storage tanks. The CO_2 feed is compressed to synthesis pressure using a steam driven compressor and the ammonia is pumped to the synthesis pressure, and both are fed into the urea synthesis section (EUG 21). The reactants form ammonium carbamate, which dehydrates to urea. Process water is collected and sent to a desorber and hydrolyzer system for recovery.

- No. 2 Urea Evaporation: Target urea concentration is accomplished through the use of the evaporation section in two (2) steps. Before going through the evaporation section a portion of the liquid urea solution may be diverted for sale as a DEF grade urea solution product. The urea solution flows through the First Stage Evaporator where it is heated and system pressure is lowered resulting in an increased urea purity/concentration. The urea solution then passes through the Second Stage Evaporator where the urea concentration is further increased. The solution is now referred to as the "urea melt." The urea melt is delivered to the granulation step for additional processing. The evaporation process requires heat, which is provided by steam from a natural gas fired boiler (EUG-23) rated at 450 MMBTUH and a second natural gas fired boiler (EUG-23) rated at 99.9 MMBTUH that will be constructed as part of the project. The steam produced is used in the synthesis step, in the evaporation step, and in the CO_2 compressor. The heat is also required to keep the refined urea in a molten state for the next step in the process.

- No. 2 Urea Granulation: A conditioning agent is added by direct injection to the urea melt to form methylenediurea. The conditioning agent is stored in the conditioning agent storage tank prior to use. The conditioning agent reacts with the urea to reduce caking during storage and to reduce dust formation during material handling. Granulation takes place in a fluidized bed. The hot urea melt is sprayed into the bed containing small seed particles. The urea spray coats the smaller particles and they increase in size. Cool air is used to cool and solidify the granules. The granulator utilizes a wet scrubber for the recovery of product and reduction of PM emissions (EUG 22). The solid urea is screened for size and sent to product storage via an enclosed belt conveyor. The material is loaded for transport in bulk via trucks or railcars (EUG 26). A portion of the granular product may be transferred to No. 1 Urea Plant for processing.

- Urea Synthesis (UAN Plant): Ammonia from the ammonia pressurized storage tanks ("bullets") and CO_2 from the ammonia plants are reacted in a once-through urea production unit at high pressure to form ammonium carbamate ($NH_2CO_2NH_4$), which then forms urea ($CO(NH_2)_2$). The CO_2 is compressed to reaction pressure using an electric driven reciprocating compressor. At the outlet of the urea synthesis reactor, the reaction mixture's pressure is dropped, which causes the unreacted ammonium carbamate to decompose back to gaseous ammonia and carbon dioxide, which is referred to as "off-gas." The off-gas stream is split and sent as ammonia feed to the nitric acid section of the UAN plant and to the ammonium nitrate section of the UAN plant.

- Nitric Acid Synthesis (UAN Plant): Nitric acid is produced in three steps: ammonia oxidation to form nitrogen oxide (NO) and H_2O; NO oxidation to form nitrogen dioxide (NO_2); and, absorption of NO_2 in water to form nitric acid (HNO_3). In the first step, compressed air and off gas from the urea section of the UAN plant are reacted in a converter over a platinum gauze catalyst to produce NO and water. The nitric oxide is further oxidized to form NO_2. The NO_2 is absorbed by water in a absorption column to form nitric acid. A bleaching section uses a secondary stream of air to strip some of the dissolved gases (mainly NO and NO_2) from the nitric acid prior to storage. Unreacted nitrogen oxides in the tail gases are mixed with hydrogen rich synthesis/purge gas and directed to the nonselective catalytic reduction (NSCR) abatement system for NO_X control. Nitric acid is stored in a storage tank, which is vented to the process condensate overhead condenser. It

should be noted that the nitric acid plant was originally constructed in Kennewick, Washington in 1968. It was relocated to the current site in 1990.

- Ammonium Nitrate Synthesis (UAN Plant): Ammonia rich off gas from the urea section of the UAN plant is neutralized with nitric acid to form ammonium nitrate (AN). The synthesis process pH is carefully controlled for safety reasons such that no free ammonia remains. Process equipment for ammonium nitrate production includes two (2) distinct vessels (neutralizer and process condensate tank), each equipped with a scrubber. These scrubbers are inherent to the process and cannot be shutdown or bypassed during the production process. The process cannot function as designed and the AN product cannot be made without the scrubber section of each vessel operating.

- Urea Ammonium Nitrate (UAN) Solution: The final step in the production of UAN is combining the urea with the ammonium nitrate to produce the UAN solution. The UAN solution contains a product specific percentage of ammonium nitrate and urea. The remainder of the solution is water. The product is stored in a storage tank prior to being bulk shipped by truck or rail. The plant operates one (1) UAN day tank and two (2) UAN storage tanks.

- Carbon Dioxide Plant: The Daylight Petroleum CO_2 Plant receives CO_2 produced in the ammonia plants and prepares it for transportation via pipeline. The CO_2 passes through three (3) stages of compression and cooling, then a final dehydration polish by contacting the gas with a circulating solution of triethylene glycol (TEG). The TEG is continuously circulated back to a glycol dehydrator where the water is driven off by heating with one (1) natural gas-fired glycol dehydrator reboiler (EU-R2401) rated at 1.5 MMBTUH. After dehydration, the CO_2 is further compressed to approximately 1,700 psig for injection into the pipeline owned and operated by Daylight Petroleum who transports it for enhanced oil recovery (EOR).

Plant operations are 24 hrs/day, every day of the year.

SECTION III. PROJECT DESCRIPTION

Ammonia from the No. 1 and No. 2 Ammonia Plants is shipped out via truck and rail or used as one of the primary feedstocks for the manufacture of urea in the No. 1 and No. 2 Urea Plants. Up until recently, ammonia was also shipped out via a pipeline. This pipeline, owned and operated by a third-party, was permanently shut down. When KFE learned of this change in the ammonia distribution system, KFE began pursuing a project to increase ammonia upgrade capabilities to reduce ammonia shipments while at the same time better servicing the growing demand for upgraded nitrogen products. This project, the UR2 Improvements Project ("the Project"), will increase urea melt production capacity in the No. 2 Urea Plant Synthesis section to 3,600 TPD, increase DEF-US sustained annual capacity to 220,000 tons, and allow for increased production in the Granulation section of the No. 2 Urea Plant up to 3,390 TPD granulated urea.

The main project scope includes new equipment and changes to existing processing equipment in the No. 2 Urea Plant in the Synthesis, DEF-US, and Granulation areas. Additionally, upgrades will be made to steam and cooling systems as described below.

Currently liquid ammonia is pumped to, and carbon dioxide is compressed and fed to, a reactor in the No. 2 Urea Plant Synthesis section, where ammonium carbamate is dehydrated into water and urea. The project will add a new Medium Pressure (MP) section to the Synthesis section. A portion of the high pressure reactor effluent will be diverted to the new MP section to flash unconverted ammonia and CO_2 from the stream, and then condensed and recycled back to the synthesis loop for further decomposition and recovery in the low pressure section. The new MP section will include a MP rectifying tower, a MP CO_2 stripper, a MP carbamate condenser, as well as other related equipment needed to achieve the project design. No new emission points are being added as part of the MP section addition; the vapor lines for the new MP section will be condensed and inerts vented to the existing Synthesis Vent scrubber.

As part of the project, minor equipment changes are being made in the No. 2 Urea Plant Granulation section, such as improvements to air cooling systems and upsizing the recycle evaporator system. Within the DEF-US section, upgrades potentially include adding a pump and minor changes to system support infrastructure.

These changes will require construction of a new natural gas fired boiler and modification of the existing cooling tower in the No. 2 Urea Plant to provide the necessary steam and cooling water for the new and modified process equipment. The new boiler will provide steam to the No. 2 Urea Plant production equipment and supplemental steam to No. 1 Urea Plant, and will allow the existing Ammonia Unit Startup Boiler to be shut down, resulting in more efficient steam production during ammonia plant startups.

Additionally, KFE assessed two projects that could potentially be substantially related to the UR2 Improvements project. The first project included upgrading the motors for the cooling tower water circulation pumps used for the No.1 and No. 2 Ammonia Plant Cooling Towers. This project was completed shortly after the UR2 Improvements Project Construction Permit No. 2016-1295-C (M-6) was issued. The project increased the throughput of cooling water through the No.1 and No. 2 Ammonia Plant Cooling Towers from 53,000 GPM and 43,283 GPM, respectively, to 60,000 GPM each to allow for greater cooling capabilities within the cooling tower systems. This upgrade for the No. 1 Ammonia Plant only occured on the old cells. The second project could improve loadout capabilities in the No. 1. Urea Plant storage, handling and loadout area to allow for better management of the two types of urea produced and managed in that area. While these projects have technical and economic drivers that are separate from those of the UR2 Improvements Project, KFE elected to incorporate these projects into the permitting analysis for the UR2 Improvements Project to allow for future flexibility should it be concluded later that the projects are substantially related, per EPA's recent guidance on project aggregation.

In 2017, KFE started up equipment associated with the Enid Expansion Project. With that project, the capacity of the existing ammonia plants (No. 1 and No. 2 Ammonia Plants) was increased and a second urea plant (the No. 2 Urea Plant) was constructed. Along with the increase of urea-based solution production capability, new urea storage, handling and loading facilities were added. As part of the project, KFE also made minor changes to the existing No. 1 Urea Plant.

KFE has evaluated the UR2 Improvements Project to determine whether it should be aggregated with the Enid Expansion Project for purposes of determining major New Source Review (NSR) applicability. As part of that evaluation, KFE consulted EPA's November 2018 final action addressing the concept of "project aggregation" for purposes of determining major NSR applicability (83 Fed Reg 57324, November 15, 2018). In that action, EPA retained and clarified its 2009 interpretation that physical or operational changes should be combined into a single "project" for analysis of major NSR applicability when the activities are "substantially related." EPA also provided clarification as to when activities at a plant can be presumed to be not substantially related.

In its 2009 Federal Register notice, EPA describes the meaning of "substantially related" as follows: "To be 'substantially related,' there should be an apparent interconnection—either technically or economically—between the physical and/or operational changes, or a complementary relationship whereby a change at a plant may exist and operate independently, however its benefit is significantly reduced without the other activity." (74 Fed Reg 2376, January 15, 2009)

With respect to timing of projects, in 2009 EPA also stated: "We believe that if a previous physical or operational change has operated for a period of three or more years, permitting authorities may presume that a newly constructed change is not substantially related to the earlier change. When activities are undertaken three or more years apart, there is less of a basis that they have a substantial technical or economic relationship because the activities are typically part of entirely different planning and capital funding cycles. The fact that the earlier activities were constructed and operated independently for such a long a period of time tends to support a determination that the latter activities are technically and economically unrelated and independent from the other earlier constructed activities. Even if activities are related, once three years have passed, it is difficult to argue that they are *substantially* related and constitute a single project." EPA also explained that, "[i]n applying this presumption, the time period separating physical or operational changes should be calculated based on time of approval (*i.e.*, minor NSR permit issuance)."

In addition, EPA states the following with respect to changes within the same process unit. "Furthermore, simply because a physical or operational change occurs at the same process unit as a previous change does not automatically establish a substantial relationship. As a commenter noted, '[a]lmost all plant improvements are dependent on another piece of equipment as a technical matter. For instance, a chemical synthesis operation may install a new process dryer or a coater may install a new dryer or oven simply because of processes already present at a facility. The decision to install the new dryer or oven, however, is separate because of other factors that could include efficiency or fuel improvements, market factors or demand for a new product or the original group of products, or process refinements.' We agree with this commenter that, despite the fact that the changes occur at the same process unit, the dryer installation could be separate from other modifications to the process unit if, as suggested by the comment, there was not a substantial technical or economic relationship among the changes. (As noted above, however, a case-specific inquiry is necessary to confirm this.)"

Applying EPA's interpretation, the emissions for the Enid Expansion Project and the UR2 Improvements Project should not be aggregated for purposes of determining major NSR applicability. First, given the timing of the projects, they are presumed to not be substantially related. The permit for the Enid Expansion Project was issued by the ODEQ in 2014, and the air permit for the UR2 Improvements Project is expected to be issued in 2019-2020, approximately six years later. This is twice the length of time that EPA indicated is sufficient for permitting authorities to presume that a new project is independent from an earlier one. Second, when the Enid Expansion Project was approved for funding, there was no indication from the third-party pipeline company that the ammonia pipeline would be shutdown. Instead, that information was initially conveyed to KFE after the Enid Expansion Project was permitted and after it was constructed and began commercial operations in 2017. Therefore, the Enid Expansion Project was funded and designed without any consideration of, much less reliance on, the UR2 Improvements Project. The Enid Expansion Project was neither economically nor technically dependent on the UR2 Improvements Project.

In addition, the benefits of the Enid Expansion Project can and are being realized without the UR2 Improvements Project. Finally, while the UR2 Improvements Project is modifying portions of the No. 2 Urea Plant constructed as part of the Enid Expansion Project, the changes being proposed are process refinements to increase production that are driven by market factors that did not exist at the time of the Enid Expansion Project. Based on this information, the Enid Expansion Project and UR2 Improvements Project are not substantially related and, therefore, should not be aggregated for major NSR applicability purposes.

Additionally, KFE is contemplating a project that is in its early scoping stages that could potentially be substantially related to the UR2 Improvements project. The project could improve loadout capabilities in the No. 1. Urea Plant storage, handling and loadout area to allow for better management of the two types of urea produced and managed in that area. While that project has technical and economic drivers that are separate from those of the UR2 Improvements Project, KFE elected to incorporate the project into the permitting analysis for the UR2 Improvements Project to allow for future flexibility should it be concluded later that the two projects are substantially related, per EPA's recent guidance on project aggregation.

SECTION IV. EQUIPMENT

- <u>New Unit</u>

EUG 23. No. 2 Urea Plant Boiler

EU ID	Point ID	EU Name/Model	Heat Input	Constr. Date
UR2BLR2	23-9171	No. 2 Urea Plant Boiler2	99.9 MMBTUH	2021

- Modified Units

EUG 17 Insignificant Activities

EU ID	Description	Capacity	Constr. Date
LS-TK-4	DEF Grade Urea Solution Storage Tank	1,146,030 Gal	2016
LS-TK-11	DEF Grade Urea Solution Storage Tank	2,258,180 Gal	2016
LS-TK-15	DEF Grade Urea Solution Storage Tank	35,000 Gal	2020
22014A	No. 1 Ammonia Plant Cooling Towers	60,000 GPM	1973
22014B	No. 2 Ammonia Plant Cooling Tower (old cells)	60,000 GPM	1975

EUG 21. No. 2 Urea Plant Synthesis Vent

EU ID	Point ID	EU Name/Model	Capacity	Constr. Date
UR2SYN	21-9163	No. 2 Urea Plant Synthesis Vent	3,600 TPD	2016

EUG 22. No. 2 Urea Plant Granulator

EU ID	Point ID	EU Name/Model	Capacity	Constr. Date
UR2GRAN	22-9164	No. 2 Urea Plant Granulator	3,390 TPD	2016

EUG 25. No. 2 Urea Plant Cooling Tower

EU ID	Point ID	EU Name/Model	Capacity	Const. Date
UR2CTWR	25-9167	No. 2 Urea Plant Cooling Tower	80,000 GPM	2016, Mod 2021

- Existing Units with Associated Emissions Changes

EUG 2 Ammonia Plant Primary Reformers

Location	EU ID	Point ID	Heat Input*	Manufacturer	Construction Date
Ammonia Plant #1	101B1	2-9095	1,076 MMBTUH hourly 965 MMBTUH annual	Kellogg	1973 (modified 2018)
Ammonia Plant #2	101B2	2-9097	1,350 MMBTUH hourly 990 MMBTUH annual	Kellogg	1975 (modified 2016)

*Heat input includes arch burners, tunnel burners, superheat burners, and auxiliary boiler burners.

EUG 5 No. 1 Urea Plant Conditioning Agent Storage Tank

EU ID	Point ID	Capacity	Construction Date
D202	5-9107	54,319 Gallons	1980

EUG 6 No. 1 Urea Plant Granulators

EU ID	Point ID	EU Name/Model	Manufacturer	Capacity	Construction/ Modification Date
K201A	6-9104	Urea Granulator A	Foster Wheeler	517 TPD	1980 / 2007
K201B	6-9105	Urea Granulator B	Foster Wheeler	517 TPD	1980 / 2007
K201C	6-9106	Urea Granulator C	Foster Wheeler	517 TPD	1980 / 2007

EUG 7 No. 1 Urea Plant Synthesis Vents

EU ID	Point ID	EU Name/Model	Manufacturer	Capacity	Construction/ Modification Date
HIC135	7-9111	No. 1 Urea Plant High Pressure Vent	Foster Wheeler	1,550 TPD	1980 / 2007
D119	7-9110	No. 1 Urea Plant Low Pressure Vent	Foster Wheeler	1,550 TPD	1980 / 2007

EUG 14 Fugitives

Location	EU ID	Point ID	EU Name
No. 1 Urea Plant	UMH	14-9120	No. 1 Urea Plant Material Handling
	UML	14-9121	No. 1 Urea Plant Railcar Loading
	UMS	14-9122	No. 1 Urea Plant Material Storage

EUG 17 Insignificant Activities

EU ID	Description
UR2FBATK	No. 2 Urea Plant Conditioning Agent Storage Tank
UR1RD	No. 1 Urea Plant Haul Roads
DEF-TRUCK	DEF-US Truck Loadout
DEF-RAIL	DEF-US Rail Loadout
DEF-TANKS	DEF-US Storage Tanks

EUG 23. No. 2 Urea Plant Boiler

EU ID	Point ID	EU Name/Model	Heat Input	Constr. Date
UR2BLR	23-9165	No. 2 Urea Plant Boiler	450 MMBTUH	2016

EUG 26. No. 2 Urea Plant Fugitive PM

EU ID	Point ID	EU Name/Model
UR2MSTG	26-9168	No. 2 Urea Material Storage
UR2MTRFR	26-9169	No. 2 Urea Materials Transfer
UR2MLD	26-9170	No. 2 Urea Materials Loading

EUG 27. New Haul Roads

EU ID	Point ID	EU Name/Model
HAULRD	---	No. 2 Urea Plant Vehicle Traffic

- Shutdown Unit

EUG 3 Boilers/Heaters > 50 MMBTUH

EU ID	Point ID	EU Name/Model	Heat Input	Manufacturer	Constr. Date
2202UB	3-9099	Ammonia Unit Startup Boiler	144 MMBTUH	Zurn Industries	1975

- Unaffected Units

EUG 1 Plant-wide

This EUG is established to address requirements that apply to the entire plant, including open burning restrictions, visible emissions, fugitive dust control. The plant is operating under a state and federally enforceable plant-wide cap for methanol, which is classified as a hazardous air pollutant (HAP). The process condensate stripper, the primary source of methanol emissions from this type of plant, is refluxed to the process rather than vented to the atmosphere.

EUG 3 Boilers/Heaters > 50 MMBTUH

EU ID	Point ID	EU Name/Model	Heat Input	Manufacturer	Constr. Date
403A	3-9100	No. 1 Urea Boiler A	84 MMBTUH	Zurn Industries	1980
403B	3-9101	No. 1 Urea Boiler B	84 MMBTUH	Zurn Industries	1980

EUG 4 Boilers/Heaters < 50 MMBTUH

Location	EU ID	Point ID	EU Name/Model	Heat Input	Manufacturer	Construction Date
Ammonia Plant #1	102B1	4-9102	No. 1 Ammonia Plant Startup Heater	33 MMBTUH	Kellogg	1973
Ammonia Plant #2	102B2	4-9103	No. 2 Ammonia Plant Startup Heater	33 MMBTUH	Kellogg	1975

EUG 8 No. 1 Urea Plant Wastewater Concentrator

Location	EU ID	Point ID	EU Name/Model	Construction Date
No. 1 Urea Plant	209U	8-9112	No. 1 Urea Plant Wastewater Concentrator	1980

EUG 9 No. 2 Ammonia Plant Cooling Tower

EU ID	Point ID	EU Name	Capacity	Constr. Date
22014B	9-9159	No. 2 Ammonia Plant Cooling Tower	72,700 GPM	1975

EUG 10 CO_2 Stripping Towers

Location	EU ID	Point ID	EU Name/Model	Manufacturer	Construction Date
Ammonia Plant #1	1102E1	10-9120	CO_2 Stripping Tower 1 (PIC30-1)	Kellogg	1973
Ammonia Plant #2	1102E2	10-9121	CO_2 Stripping Tower 2 (PIC30-2)	Kellogg	1975

EUG 11 Nitric Acid Plant

EU ID	Point ID	Manufacturer	Capacity (as 100% HNO_3)	Construction Date
M221	11-9115	Weatherly	118 TPD	1968 / 1990 *

* This unit was originally constructed in 1968 and relocated to Enid in 1990 from Kennewick, Washington.

EUG 12 Ammonium Nitrate (AN) Plant

EU ID	Point ID	Manufacturer	Capacity (as 75.5% AN)	Construction Date
T311	12-9116	Weatherly	176 TPD	1968 / 1990 *

* This unit was constructed in a different location and relocated to Enid in 1990.

EUG 13 Flares

EU ID	Point ID	Heat Input *	Construction Date
222OU	13-9118	1,350 SCFH	1993
2121U	13-9119	802 SCH	2018

*Heat input refers to natural gas and/or purge gas to maintain flare pilot.

EUG 15 Startup/Shutdown Vents

Location	EU ID	Point ID	EU Name	Construction Date
Ammonia Plant #2	308E	15-9109	Process Condensate Stripper	1980
Ammonia Plant #1	SP73-1	15-9151	Startup/Shutdown Vent 1	1973
Ammonia Plant #1	SP74-1	15-9152	Startup/Shutdown Vent 2	1973
Ammonia Plant #1	SP75-1	15-9153	Startup/Shutdown Vent 3	1973
Ammonia Plant #2	SP73-2	15-9154	Startup/Shutdown Vent 1	1975
Ammonia Plant #2	SP74-2	15-9155	Startup/Shutdown Vent 2	1975
Ammonia Plant #2	SP75-2	15-9156	Startup/Shutdown Vent 3	1975
Ammonia Plant #1	1102E1	15-9120	CO_2 Stripping Tower 1 (PIC30-1)	1973
Ammonia Plant #2	1102E2	15-9121	CO_2 Stripping Tower 2 (PIC30-2)	1975

EUG 16 No. 1 Urea Plant Cooling Tower No. 2

EU ID	Point ID	EU Name
22014D	22014D	No. 1 Urea Plant Cooling Tower No. 2

EUG 17 Insignificant Activities

EU ID	Description
R-2401	Glycol dehydration reboiler (1.5 MMBTUH)
APP-IC	475-hp Portable mixer engine *
APP-Portable Unit	APP Portable 10-34-0 processing unit*
Diesel	Diesel storage tanks (4)
UAN TANKS	UAN tanks (3)
LIME	Lime silos (2)
#1 Plant TV-50 Vent	No. 1 Ammonia Plant TV-50 vent
#1 PIC-14 Vent (PV-179)	No. 1 Ammonia Plant PIC-14 fuel vent (PV-179)
#1 PIC-33 Vent (PV-30C)	No. 1 Ammonia Plant PIC-33 fuel vent (PV-30C)
#1 Catalyst Warm-ups	No. 1 Ammonia Plant catalyst warm-up vent (SP-73)
#1 Low Shift Vent	No. 1 Ammonia Plant Low-Shift Reductions vent (SP-73)
#1 LTS Catalyst Cooling	No. 1 Ammonia Plant LTS Catalyst Cooling vent (SP-73)
#1 HTS Catalyst Cooling	No. 1 Ammonia Plant HTS Catalyst Cooling vent (SP-73)

EU ID	Description
#1 Methanator Catalyst Cooling	No. 1 Ammonia Plant Methanator Catalyst Cooling vent (SP-73)
#2 Plant TV-50 Vent	No. 2 Ammonia Plant TV-50 vent
#2 PIC-14 Vent (PV-179)	No. 2 Ammonia Plant PIC-14 fuel vent (PV-179)
#2 PIC-33 Vent (PV-30C)	No. 2 Ammonia Plant PIC-33 fuel vent (PV-30C)
#2 Catalyst Warm-ups	No. 2 Ammonia Plant catalyst warm-up vent (SP-73)
#2 Low Shift Vent	No. 2 Ammonia Plant Low-Shift Reductions vent (SP-73)
#2 LTS Catalyst Cooling	No. 2 Ammonia Plant LTS Catalyst Cooling vent (SP-73)
#2 HTS Catalyst Cooling	No. 2 Ammonia Plant HTS Catalyst Cooling vent (SP-73)
#2 Methanator Catalyst Cooling	No. 2 Ammonia Plant Methanator Catalyst Cooling vent (SP-73)
Lab Vents	Laboratory fume hoods and vents
UR-TK-2405	Super U Slurry Storage Tank
UR-TK-2415	Super U Slurry Storage Tank
22014C	UAN Plant Cooling Tower
22014D	No. 1 Urea Plant Cooling Tower (old cells)
Diesel Tank	12,000-gallon Diesel Tank

* Equipment owned, operated, and maintained by a contractor.

EUG 18. Emergency Engines Subject to NSPS Subpart JJJJ

Point ID	Capacity (hp)	Make/Model	Installed Date
GEN2	147	On-Site Energy / Generac 6.8GN	2010
GEN3	40	Power Solutions / Olympian G25LTA	2011
GEN4	49	Southwest Building / Generac 1.5 RG025	2018

EUG 19. A2 Emergency Generator Diesel Engine Subject to NESHAP Subpart ZZZZ

Point ID	Capacity (hp)	Make/Model	Serial Number	Installed Date
GEN	460	Cummins KT-1150-G	100P1432	1976

EUG 19A. Emergency Firewater Pumps Subject to NSPS Subpart IIII

EU ID	Point ID	Capacity (hp)	Make/Model	Serial Number	Installed Date
South Emergency Firewater Pump	PUMP	150	Cummins CFP5E-F50	73936914	2015
North Emergency Firewater Pump	PUMP2	305	John Deere JU6H-UFADX8	15-072741-02-011QX3758	2016

EUG 20. Gasoline Tank

EU ID	Point ID #	EU Description	Capacity	Construction Date
Gasoline	Gasoline	Vehicle gasoline tank	1,128 gal	>2003

SECTION V. EMISSIONS

Emission factors are derived from several sources including AP-42, other published emission estimation methodologies, stack tests, laboratory data, permitted limits, mass balance equations, and process knowledge. As indicated, some factors have been adjusted by a safety factor to account for process variability.

KFE quantified emissions of hazardous air pollutants (HAPs) from processes facility-wide. For the combustion processes, emission factors from AP-42 (7/98), Section 1.4 and Section 1.11 and from other published information are used as a means of estimating emissions, some of which were derived from limited test data. For HAP estimates from non-combustion processes, methodology is discussed in this section for individual emission unit groups. Ammonia emissions are no longer shown due to the revocation of OAC 252:100-41.

- New Unit

EUG 23 No. 2 Urea Plant Boiler 2

Emissions from the new boiler were based on a unit capacity of 99.9 MMBTUH. NOx, CO, SO_2, VOC, and PM_{10} / $PM_{2.5}$ emission are taken from manufacturer data. GHG emission factors are based on 40 CFR Part 98, Subpart C for natural gas combustion.

Unit Capacity	Pollutant	Emission Factor, lb/MMBTU	Emissions	
			lb/hr	TPY
99.9 MMBTUH	NOx	0.045	4.50	19.71
	SO_2	0.0055	0.55	2.41
	CO	0.037	3.70	16.21
	PM_{10} / $PM_{2.5}$	0.0076	0.76	3.33
	VOC	0.0055	0.55	2.41
	GHG	117	11,710	51,288

- Modified Units

EUG 17 Insignificant Activities

DEF Grade Storage, Loading, and Rail

VOC emissions were calculated using AP-42 Chapter 7.1 and Chapter 5.2. The tanks have a total of 187,113,600 gal/yr maximum throughput of DEF-US. Potential to emit calculations for Rail loading and Truck Loading are also based on 187,113,600 gal/yr maximum throughput.

Emission Unit	VOC	
	lb/hr	TPY
DEF Grade Urea Solution Storage Tank 4	0.03	0.07
DEF Grade Urea Solution Storage Tank 11		
DEF Grade Urea Solution Storage Tank 15		
DEF Grade Urea Solution Rail Loading	0.05	0.11
DEF Grade Urea Solution Truck Loading	0.05	0.11

No. 1 Ammonia Plant Cooling Tower

PM emissions from the No. 1 Ammonia Plant Cooling Tower were calculated using a drift factor of 0.001%, water circulation rate of 60,000 GPM, and total dissolved solids content of 3,300 ppm. PM_{10} / $PM_{2.5}$ emissions were calculated from methodology in "Calculating Realistic PM_{10} Emissions from Cooling Towers" (Joel Reisman and Gordon Frisbie).

Circulation Rate, GPM	Drift Factor	TDS, ppm	Emission Factor	Pollutant	Emissions	
					lb/hr	TPY
60,000	0.001%	3,300	Mass balance	PM	0.99	4.34
			47.1% of PM	PM_{10}	0.47	2.04
			0.2% of PM	$PM_{2.5}$	0.002	0.009

No. 2 Ammonia Plant Cooling Tower

PM emissions from the No. 2 Ammonia Plant Cooling Tower old cells are calculated based on a drift factor of 0.001%, water circulation rate of 60,000 GPM, and total dissolved solids content of 3,300 ppm. PM_{10} / $PM_{2.5}$ emissions were calculated from methodology in "Calculating Realistic PM_{10} Emissions from Cooling Towers" (Joel Reisman and Gordon Frisbie).

Circulation Rate, GPM	Drift Factor	TDS, ppm	Emission Factor	Pollutant	Emissions	
					lb/hr	TPY
60,000	0.001%	3,300	Mass balance	PM	0.99	4.34
			47.1% of PM	PM_{10}	0.47	2.04
			0.2% of PM	$PM_{2.5}$	0.002	0.009

EUG 21 No. 2 Urea Plant Synthesis Vent

The No. 2 Urea Plant will have a design capacity of 3,600 TPD. PM_{10} / $PM_{2.5}$ emissions are based on vendor guarantees, while CO emissions are based on June 2006 analytical testing (sampling of the CO content in the CO_2 stream sent to urea plants) data plus a 300% safety factor.

Unit Throughput, TPH	Pollutant	Emission Factor	Emissions	
			lb/hr	TPY
150 TPH	PM_{10} / $PM_{2.5}$	0.046 lb/hr	0.05	0.20
	CO	0.029 lb/ton	3.08	12.83

EUG 22 No. 2 Urea Plant Granulator

The No. 2 Urea Plant granulator has a design capacity of 3,390 TPD (141.25 TPH). The listed PM emission factor, 0.043 lb/ton, was derived from vendor guarantees for PM emissions of 5 mg / dry m3. Controlled formaldehyde emissions were taken from EPA's "Locating and Estimating Air Emissions from Sources of Formaldehyde" (March 1991). Methanol emissions were based on 0.2% (hourly) and 0.12% (annual) in the granulation additive, annual usage of 2,097,774 gallons, and 11.03 lb/gallon density. VOC is the sum of methanol plus formaldehyde.

Unit Throughput, TPH	Pollutant	Emission Factor	Emissions	
			lb/hr	TPY
141.25 TPH	PM_{10} / $PM_{2.5}$	0.043 lb/ton	6.04	26.45
	VOC*	Mass Balance	11.40	18.95
	Formaldehyde	Mass Balance	0.76	3.67
	Methanol	Mass Balance	4.80	15.27

*NOTE: hourly emissions based on worst-case formaldehyde and methanol concentrations in additives.

EUG 25 No. 2 Urea Plant Cooling Tower 2

PM emissions from the No. 2 Urea Plant Cooling Tower were calculated using a drift factor of 0.0005%, water circulation rate of 80,000 GPM, and total dissolved solids content of 3,300 ppm. PM_{10} / $PM_{2.5}$ emissions were calculated from methodology in "Calculating Realistic PM_{10} Emissions from Cooling Towers" (Joel Reisman and Gordon Frisbie).

Circulation Rate, GPM	Drift Factor	TDS, ppm	Emission Factor	Pollutant	Emissions	
					lb/hr	TPY
80,000	0.0005%	3,300	Mass balance	PM	0.66	2.89
			47.1% of PM	PM_{10}	0.31	1.36
			0.2% of PM	$PM_{2.5}$	0.01	0.01

- Existing Units with Associated Emissions Changes

EUG 2 Ammonia Plant Primary Reformers

Emission factors for CO and PM_{10} / $PM_{2.5}$ are from AP-42, Section 1.4 (7/98) using a fuel heat content of 1,020 BTU/SCF. For SO_2, a 50% safety factor was added to the AP-42 factor. No. 1 and No. 2 Reformer post-project short-term NOx emissions were based on 0.2 lb/MMBTU to cover all operational circumstances; the annual NO_X emissions were based on the stack test results of 0.1185 lb/MMBTU for the No. 1 Reformer and 0.04 lb/MMBTU for the No. 2 reformer. GHG emission factors are based on 40 CFR Part 98, Subpart C for natural gas combustion.

Point ID	Emission Unit	PM_{10} / $PM_{2.5}$		SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
2-9095 (No. 1 Reformer)	101B1	8.02	31.49	0.95	3.73	215.20	500.86	5.80	22.79	88.61	348.08
2-9097 (No. 2 Reformer)	101B2	10.06	32.31	1.19	3.83	270.00	173.45	7.28	23.38	111.18	357.10
TOTALS		**18.08**	**63.80**	**2.14**	**7.56**	**485.20**	**674.31**	**13.08**	**46.71**	**199.79**	**705.18**

EUG 5 No. 1. Urea Plant Conditioning Agent Storage Tank

Maximum emission estimates of formaldehyde from the No. 1 Urea Plant conditioning agent storage tank (EU-D202) are based on the maximum capability to pump into or out of the tank, on an hourly and annualized basis, and upper-bound free formaldehyde concentration in the conditioning agent using the procedures of AP-42 (11/06), Section 7.1, and a throughput of 1,410,528 gallons/yr.

Point ID	Tank No.	VOC Emissions	
		lb/hr	TPY
5-9107	D202	2.72	0.14

Methanol emissions from this source are included in EUG 6 as it was conservatively assumed that the methanol contained in the conditioning agent would all be emitted during the granulation process.

EUG 6 No. 1 Urea Plant Granulators

The emission factor for PM is the controlled factor derived from stack testing, 0.0307 lb/ton from drum granulators, which includes a 13% safety factor. It was assumed that PM is equal to PM_{10} and $PM_{2.5}$.

Formaldehyde factors are from an EPA document, "Locating and Estimating Air Emissions from Sources of Formaldehyde (Revised)", dated March 1991. The EPA document provides a controlled emission factor of 0.0054 lb formaldehyde/ton urea.

Methanol emissions are present in the granulators from the methanol in the conditioning agent. Methanol hourly emissions are based on an upper limit of 0.20% by weight in an 11.03 lb/gal liquid, while annual emissions are based on 0.12% by weight. Formaldehyde emissions are based on 0.02% by weight in the conditioning agent.

Point ID	Emission Unit	PM_{10} / $PM_{2.5}$		Formaldehyde		Methanol	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY*
6-9104	No. 1 Urea Granulator A	6.60	28.92	0.12	0.51	2.59	3.11
6-9105	No. 1 Urea Granulator B	6.60	28.92	0.12	0.51	2.59	3.11
6-9106	No. 1 Urea Granulator C	6.60	28.92	0.12	0.51	2.59	3.11
TOTALS		**19.80**	**86.76**	**0.36**	**1.53**	**7.76**	**9.33**

*****Annual emissions of methanol have been included in the EUG-1 plant-wide cap, and any one source may emit up to 9.9 TPY so long as all sources combined emit less than 9.9 TPY.

Note that the potential methanol emissions are estimates only and are not intended to be used as individual emission unit limits in the permit since methanol emissions have been included in the plant-wide cap.

EUG 7 No. 1 Urea Plant Synthesis Vents

CO emissions were derived from stack testing in 2006 as test results plus a 300% safety factor, assuming equal CO between high-pressure and low-pressure vents. PM_{10} / $PM_{2.5}$ emissions were based on AP-42 (7/93), assuming75% from the high pressure vent and 25% from the low-pressure vent. Hourly emissions assume a short-term production rate of 1,600 TPD, while annual emissions assume production of 1,550 TPD.

Point ID	Emission Unit	Process Rate, TPH	Pollutant	Emission Factor, lb/ton	Emissions	
					lb/hr	TPY
7-9111	No. 1 Urea Plant High-Pressure Vent	66.7	PM_{10} / $PM_{2.5}$	0.021	1.40	5.94
			CO	0.029	1.93	8.20
7-9110	No. 1 Urea Plant Low-Pressure Vent	66.7	PM_{10} / $PM_{2.5}$	0.007	0.47	1.98
			CO	0.029	1.93	8.20

EUG 14 Fugitives

Particulate matter fugitive emissions are generated from granular urea storage, transfer, and loading. However, these operations should generate negligible PM_{10} due to the organic, non-brittle, sticky nature of the material. In addition, the plant adds a conditioning agent that further reduces dust formation. A sieve analysis of urea product showed no measurable PM_{10}. Using the methods of AP-42 (1/95) for batch drop operations will greatly overstate emissions.

EU ID	Point ID	Emission Unit	PM		PM_{10}	
			lb/hr	TPY	lb/hr	TPY
UML	14-9120	Urea Railcar Loading	1.19	0.76	1.01	0.65
UMH	14-9121	Urea Materials Handling	0.27	1.51	0.23	1.28
UMS	14-9122	Urea Materials Storage	0.19	1.08	0.16	0.92
TOTALS			**1.65**	**3.35**	**1.40**	**2.85**

EUG 17: Insignificant Activities

No.1 Urea Plant Haul Roads were excluded from this list initially assuming paved roads would have negligible PM emissions.

Fugitive dust emissions were calculated using the method of AP-42 (1/2011), Section 13.2.1:

$EF\ (lb/VMT) = k * (sl)^{0.91} * W^{1.02} * (1\text{-}p / 4N) * (1 – CE)$

Where:
- $k = 0.0022$ for PM_{10} and 0.00054 for $PM_{2.5}$
- sl = silt loading, 0.6 g/m^2
- W = average vehicle weight, 27 tons
- p = number of days in a year with at least 0.01 inch rain, default = 80
- N = number of days in a year, 365
- CE = control efficiency, 82.9% for water flushing and sweeping

The facility anticipates loading approximately 24.0 tons per truck:

- 82 trucks per day hauling urea 0.8 mile each trip (65.6 miles/day, 23,953 miles/yr).

Based on the emission calculations for the road segments and summing all segments, PM_{10} emissions will be 0.43 TPY and $PM_{2.5}$ emissions will be 0.10 TPY.

No. 2 Urea Plant Conditioning Agent Storage Tank emissions were calculated using the methods of AP-42 (11/06), Section 7.1, using 2,097,774 gal/year maximum throughput.

Tank ID	VOC	
	lb/hr	TPY
No. 2 Urea Plant Conditioning Agent Storage Tank	2.76	0.21

EUG 23 No. 2 Urea Plant Boiler 1

Emissions from the boiler were based on a unit capacity of 450 MMBTUH. NOx and CO emission are taken from manufacturer data. , SO_2, VOC, and PM_{10} / $PM_{2.5}$ emissions are based on AP-42 (1/95), Section 1.4. GHG emission factors are based on 40 CFR Part 98, Subpart C for natural gas combustion.

Unit Capacity	Pollutant	Emission Factor, lb/MMBTU	Emissions	
			lb/hr	TPY
450 MMBTUH	NOx	0.045	20.25	88.70
	SO_2	0.0006	0.26	1.16
	CO	0.037	16.65	72.93
	PM_{10} / $PM_{2.5}$	0.0076	3.35	14.69
	VOC	0.0055	2.43	10.63
	GHG	117	52,652	230,614

EUG 26 No. 2 Urea Plant Fugitive PM (Loading, Storage, and Transfer)

Calculation of loading PM was based on a production capacity of 3,390 TPD urea (141.3 TPH). An uncontrolled emission factor of 0.017 lb PM_{10}/ton urea was obtained from EPA's WEBFIRE database. Three control efficiencies were determined for the control methods:

1. 75% for loading using telescopic chutes per EPA's "Stationary Source Control Techniques for Fine Particulate Matter" (D-98-026, 1998)
2. 85% for partial enclosures per TCEQ "Technical Guidance for Rock Crushing Plants;"
3. 90% for product conditioning which results in stronger granules which resist crushing to dust;
4. 90% for single enclosures per TCEQ, "Technical Guidance for Rock Crushing Plans;" and
5. 99% for two levels of enclosure per TCEQ, "Technical Guidance for Rock Crushing Plans."

$PM_{2.5}$ was stated at 69% of PM_{10} per "Emissions from Industrial Plants – Results from Measurement Programmes in Germany" (December 2006).

The following emissions will be discharged from each of movement from the No. 2 Urea Plant to storage, loading from storage onto transfer conveyors, and loading from transfer conveyers into trucks or railcars.

Operation	Process Rate	Pollutant	Emission Factor	Control Efficiency 1	Control Efficiency 2	Control Efficiency 3	Emissions, TPY
Loading	141.3 TPH	PM_{10}	0.017 lb/ton	85%	90%	75%	0.04
		$PM_{2.5}$	69% of PM_{10}	--	--	--	0.03
Storage	141.3 TPH	PM_{10}	0.017 lb/ton	90%	99%	90%	0.12
		$PM_{2.5}$	69% of PM_{10}	--	--	--	0.08
Transfer	141.3 TPH	PM_{10}	0.017 lb/ton	99%	90%	--	0.12
		$PM_{2.5}$	69% of PM_{10}	--	--	--	0.08

EUG 27 New Haul Roads

Fugitive dust emissions were calculated using the method of AP-42 (1/2011), Section 13.2.1:

$EF\ (lb/VMT) = k * (sl)^{0.91} * W^{1.02} * (1\text{-}p / 4N) * (1 – CE)$

Where: k = 0.0022 for PM_{10} and 0.00054 for $PM_{2.5}$
sl = silt loading, 0.6 g/m^2
W = average vehicle weight, 27 tons
p = number of days in a year with at least 0.01 inch rain, default = 80
N = number of days in a year, 365
CE = control efficiency, 82.9% for water flushing and sweeping

The facility anticipates loading 26 tons per truck:

- 109 trucks per day hauling urea 0.303 mile each way (66 miles/day, 24,100 miles/yr)
- 40 trucks per day hauling DEF-US grade urea solution 0.18 mile each way (29 miles/day, 10,500 miles/yr)

The facility anticipates loading 26 tons per truck:

- 109 trucks per day hauling urea 2.06 miles each trip (514 miles/day, 82,025 miles/yr)
- 40 trucks per day hauling DEF-US grade urea solution 1.29 miles each trip (103 miles/day, 18,803 miles/yr)

EPA guidance, “Control of Open Fugitive Dust Sources” (EPA-450/3-88-008), Table 2-4, lists a control efficiency for “Water flushing followed by sweeping” as “96% - 0.263 * V,” where V is the number of vehicles which traverse a road following the control measure, here shown as 50 for 82.6% and 75 for 76.3%.

- Shutdown Unit

EUG 3 Boilers/Heaters > 50 MMBTUH

Emission factors for CO, PM_{10}, SO_2, and VOC are from AP-42, Section 1.4 (7/98), and a fuel heating content of 1,020 BTU/Scf. A 50% safety factor was applied to the AP-42 factors to account for process variability. The emission factor for NOx is based on OAC 252:100-33 limit of 0.2 lb/MMBTU. The annual emission rates for 2202UB are based on 4,380 hours per year operation.

Point ID	Emission Unit	PM_{10} / $PM_{2.5}$		SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
3-9099	2202UB	1.6	3.5	0.1	0.2	28.8	63.0	1.2	2.6	17.8	39.0

- Unaffected Units

EUG 3 Boilers/Heaters > 50 MMBTUH

Emission factors for CO, PM_{10}, SO_2, and VOC are from AP-42, Section 1.4 (7/98), and a fuel heating content of 1,020 BTU/Scf. A 50% safety factor was applied to the AP-42 factors for PM, PM_{10}, $PM_{2.5}$, CO, and SO_2. The emission factor for NOx is based on OAC 252:100-33 limit of 0.2 lb/MMBTU. The annual emission rates for 403A and 403B are based on 8,760 hours per year.

Point ID	Emission Unit	PM_{10} / $PM_{2.5}$		SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
3-9100	403A	0.94	4.11	0.07	0.32	16.80	73.58	0.45	1.98	10.38	45.45
3-9101	403B	0.94	4.11	0.07	0.32	16.80	73.58	0.45	1.98	10.38	45.45
TOTALS		**1.88**	**8.22**	**0.14**	**0.64**	**33.60**	**147.16**	**0.90**	**3.96**	**20.76**	**90.90**

EUG 4 Boilers/Heaters < 50 MMBTUH

Emission factors for CO, NO_x, PM_{10}, SO_2, and VOC are from AP-42, Section 1.4 (7/98), and a fuel heating content of 1,020 BTU/Scf. A 50% safety factor was applied to the AP-42 factors to account for process variability.

Point ID	Emission Unit	PM_{10} / $PM_{2.5}$		SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
4-9102	102B1	0.4	1.6	0.03	0.1	4.9	21.3	0.3	1.2	4.1	17.9
4-9103	102B2	0.4	1.6	0.03	0.1	4.9	21.3	0.3	1.2	4.1	17.9
TOTALS		**0.8**	**3.2**	**0.06**	**0.2**	**9.8**	**42.6**	**0.6**	**2.4**	**8.1**	**35.8**

EUG 10 CO_2 Stripping Towers

Based on process knowledge, a small amount of CO may be present in the CO_2 stream vented from the CO_2 stripper during startup, shutdown, or malfunction events. The emission factor for CO is derived from testing performed in June 2006 for the CO_2 Stripping Tower #1 scaled up to the maximum CO_2 production rate and a safety factor of 300% to account for process variability. Note that CO emissions are only vented from this source during startup, shutdown, or malfunction events; however, for PTE calculations, 8,760 hours/year of venting was assumed.

Point ID	Emission Unit	CO	
		lb/hr	TPY
10-9120	CO_2 Stripping Tower 1 (PIC30-1)	5.8	25.4
10-9121	CO_2 Stripping Tower 2 (PIC30-2)	5.8	25.4
TOTALS		**11.6**	**50.8**

This EUG also has the potential to emit methanol during periods of startup, shutdown, or malfunction of the ammonia plants. Startup/shutdown emissions are included in EUG 15.

EUG 11 Nitric Acid Plant

Potential emissions of NO_x from this source are based on previously established permit limits from Permit No. 90-140-O. NO_x emissions were calculated based on a permitted concentration of 79 ppmdv and a design exhaust flow rate of 8,817 SCFM. This unit is equipped with a non-selective catalytic reduction system (NSCR) to reduce NO_x emissions.

Start-up and shutdown emissions have been based on 750 ppm, 3 hours per shutdown, 5 hours per startup, and a total of 50 events per year.

Point ID	Emission Unit	NO_X	
		lb/hr	TPY
11-9115	Nitric Acid Plant – Normal Operations	5.0	21.9
	Nitric Acid Plant – Start-up and Shutdown	47.5	3.6
TOTALS		**47.5**	**25.5**

EUG 12 Ammonium Nitrate (AN) Plant

The emission factor for PM is a controlled factor from AP-42 Section 8.3. AP-42 provides a wide range of controlled factors for PM, which is based on the type of controls used at the AN Plant. The maximum PM factor was adjusted to account for the type of controls used at the Enid Plant. It was assumed that PM is equal to PM_{10}. A small amount of CO is present in the CO_2 feed from the urea section of the UAN Plant. A mass balance equation was used to quantify CO emissions.

Point ID	Emission Unit	PM_{10} / $PM_{2.5}$		CO	
		lb/hr	TPY	lb/hr	TPY
12-9116	AN Plant	2.6	11.0	0.1	0.5

EUG 13 Flares

Flare 13-9118: the flare pilot consumes 1,350 SCF/hr natural gas and the flare combusts a maximum 60,000 lb/hr of ammonia. Design criteria assure 98% destruction efficiency. For the combustion of natural gas and ammonia plant purge gas, the emission factors for CO and NO_x are from AP-42 Section 13.5 (dated 9/91, reformatted 1/95). VOC emissions were calculated using a mass balance and based on 98% destruction efficiency. The emission factor for SO_2 is from AP-42 Section 1.4 (dated 7/98). KFE estimated NOx emissions from ammonia flaring using emission estimating methodologies from the "Air Permit and Technical Guidance for Chemical Sources: Flares and Oxidizers", Texas Natural Resource Conservation Commission (TNRCC), Air Permits Division, October 2000 (RG-109 Draft).

Flare 13-9119: emissions are calculated based on 0.02 MMBTUH pilot gas, 0.8 MMBTUH assist gas, and a maximum of 28,384 lb/hr ammonia. Maximum anticipated operations are 2,000,000 lb/yr flared ammonia, but the pilot flame will be operated year-round. Emissions of NOx were calculated using TCEQ factors for ammonia combustion and AP-42 (12/16) Section 13.5 for pilot and assist gas combustion.

Point ID	Emission Unit	SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
13-9118	222OU	0.05	0.01	339.3	15.8	80.1	2.3	30.4	3.0
13-9119	212IU	0.01	0.05	157.68	5.80	0.54	2.36	0.26	1.11
TOTALS		**0.06**	**0.06**	**496.97**	**21.60**	**80.64**	**4.66**	**30.66**	**4.11**

EUG 15 Startup/Shutdown Vents

The ammonia plant startup and shutdown vents (EUs SP73-1 and SP73-2) have the potential to emit large quantities of CO for a short period of time from pressure control valves located within each plant. A total of 63 hours/year was assumed. Potential emission rates are based on process flow rates and stream composition data.

Potential methanol emissions from the CO_2 stripping towers (EU 1102E1 and 1102E2) were estimated based on the data from the June 2006 test for the #1 CO_2 stripping tower. The test results were scaled up to the maximum CO_2 production rate. It was assumed that methanol emissions from the #2 CO_2 stripping tower are equivalent to the #1 CO_2 stripping tower. A total of 36 hours/year from each vent was assumed PTE calculation purposes. Note that the potential methanol emissions are estimates only and are not intended to be used as individual emission unit limits in the permit since methanol emissions have been included in the plant-wide cap.

The Process Condensate Stripper (EU 308E) has the potential to emit methanol only during periodic venting. Typically, this source does not vent to the atmosphere due to the process condensate recycle system. Potential methanol emissions from EU 308E have been estimated based on the maximum anticipated condensate flow rate and maximum anticipated methanol content. For annual emissions it was conservatively estimated that the plant would experience 115 hours per year of unforeseen releases. During plant maintenance, process condensate may be routed to the zero discharge pond. From the zero discharge pond, the water is sent to the No. 1 Urea Plant wastewater concentrator. During these events, the methanol in the condensate may be evaporated from the No. 1 Urea Plant wastewater concentrator; however, methanol emissions have been accounted for under the plant-wide cap as if they were emitted from the vent rather than the No. 1 Urea Plant wastewater concentrator.

Point ID	Emission Unit	CO		Methanol	
		lb/hr	TPY	lb/hr	TPY*
15-9151 15-9152 15-9153	Ammonia Plant No. 1 SU/SD Vents	10,962.8	345.3	--	--
15-9154 15-9155 15-9156	Ammonia Plant No. 2 SU/SD Vents	10,962.8	345.3	--	--
15-9120	CO_2 Stripping Tower 1 (PIC30-1)	--	--	35.8	0.6
15-9121	CO_2 Stripping Tower 2 (PIC30-2)	--	--	35.8	0.6
15-9109	Process Condensate Stripper	--	--	131.9	2.4
TOTALS		**21925.6**	**690.6**	**203.5**	**3.6**

*****Annual emissions of methanol have been included in the EUG-1 plant-wide cap, and any one source may emit up to 9.9 TPY so long as all sources combined emit less than 9.9 TPY.

Note that the potential methanol emissions are estimates only and are not intended to be used as individual emission unit limits in the permit since methanol emissions have been included in the plant-wide cap.

EUG 16 No. 1 Urea Plant Cooling Tower No. 2

PM_{10} emissions from the No. 1 Urea Cooling Tower No. 2 were calculated based on a maximum water circulation rate of 12,000 GPM, total dissolved solids of 3,500 ppm by weight, and a drift factor of 0.002%.

Point ID	Emission Unit	PM_{10}	
		lb/hr	TPY
22014D	No. 1 Urea Plant Cooling Tower No. 2	0.42	1.84

EUG 17 Insignificant Activities

Emission Unit	PM_{10}		SO_2		NO_x		VOC		CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Glycol dehydration reboiler	0.01	0.05	0.01	0.01	0.2	0.6	0.01	0.04	0.1	0.5
475-hp Portable mixer engine	0.01	0.05	0.01	0.03	0.3	1.5	0.01	0.06	0.1	0.03
APP Portable 10-34-0 processing unit	--	--	--	--	--	--	--	--	--	--
Diesel storage tanks (4)	--	--	--	--	--	--	--	0.1	--	--
UAN tanks (3)	--	--	--	--	--	--	--	--	--	--
Lime silos (2)	0.2	0.7	--	--	--	--	--	--	--	--
No. 1 Ammonia Plant TV-50 vent	--	--	--	--	--	--	104.3	4.9	--	--
No. 1 Ammonia Plant PIC-14 fuel vent (PV-179)	--	--	--	--	--	--	10.4	0.6	--	--
No. 1 Ammonia Plant PIC-33 fuel vent (PV-30C)	--	--	--	--	--	--	10.4	0.6	--	--
No. 1 Ammonia Plant catalyst warm-up vent (SP-73)	--	--	--	--	--	--	104.3	1.9	--	--

Emission Unit	PM_{10}		SO_2		NO_x		VOC		CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
No. 1 Ammonia Plant Low-Shift Reductions vent (SP-73)	--	--	--	--	--	--	291.4	4.1	--	--
No. 1 Ammonia Plant LTS Catalyst Cooling vent (SP-73)	--	--	--	--	--	--	208.7	0.4	--	--
No. 1 Ammonia Plant HTS Catalyst Cooling vent (SP-73)	--	--	--	--	--	--	208.7	0.4	--	--
No. 1 Ammonia Plant Methanator Catalyst Cooling vent (SP-73)	--	--	--	--	--	--	208.7	0.4	--	--
No. 2 Ammonia Plant TV-50 vent	--	--	--	--	--	--	104.3	4.9	--	--
No. 2 Ammonia Plant PIC-14 fuel vent (PV-179)	--	--	--	--	--	--	10.4	0.6	--	--
No. 2 Ammonia Plant PIC-33 fuel vent (PV-30C)	--	--	--	--	--	--	10.4	0.6	--	--
No. 2 Ammonia Plant catalyst warm-up vent (SP-73)	--	--	--	--	--	--	104.3	1.9	--	--
No. 2 Ammonia Plant Low-Shift Reductions vent (SP-73)	--	--	--	--	--	--	291.4	4.1	--	--
No. 2 Ammonia Plant LTS Catalyst Cooling vent (SP-73)	--	--	--	--	--	--	208.7	0.4	--	--
No. 2 Ammonia Plant HTS Catalyst Cooling vent (SP-73)	--	--	--	--	--	--	208.7	0.4	--	--
No. 2 Ammonia Plant Methanator Catalyst Cooling vent (SP-73)	--	--	--	--	--	--	208.7	0.4	--	--
Laboratory vents	--	--	--	--	--	--	--	<5	--	--
No. 2 Urea Plant Conditioning Agent Storage Tank	--	--	--	--	--	--	2.76	0.21	--	--
Super U Slurry storage tank	--	--	--	--	--	--	--	--	--	--
Super U Slurry storage tank	--	--	--	--	--	--	--	--	--	--
No. 1 Ammonia Plant Cooling Tower	0.03	0.12	--	--	--	--	--	--	--	--
No. 2 Ammonia Plant Cooling Tower (old cells)	0.43	1.89	--	--	--	--	--	--	--	--
UAN Plant Cooling Tower	0.4	1.75	--	--	--	--	--	--	--	--

Emission Unit	PM_{10}		SO_2		NO_x		VOC		CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
No. 1 Urea Plant Cooling Tower (old cells)	0.19	0.82	--	--	--	--	--	--	--	--
12,000-gallon Diesel tank	--	--	--	--	--	--	--	0.1	--	--
DEF-US Truck Loadout	--	--	--	--	--	--	0.05	0.11	--	--
DEF-US Rail Loadout	--	--	--	--	--	--	0.05	0.11	--	--
DEF-US Storage Tanks	--	--	--	--	--	--	0.03	0.07	--	--
No.1 Urea Plant Haul Roads	0.51	0.43	--	--	--	--	--	--	--	--
TOTALS	**1.78**	**5.81**	**0.02**	**0.04**	**0.5**	**2.1**	**2296.71**	**32.39**	**0.2**	**0.53**

Emissions estimates from the portable fertilizer mixing unit, which is owned, operated, and maintained by a contractor, are based on 350 hours/year anticipated operation and manufacturer's data.

EUG 18 Emergency Engines Subject to NSPS Subpart JJJJ

For GEN2 and GEN3, emissions factors for NOx, CO, and VOC are NSPS Subpart JJJJ limits. For GEN4, NOx emissions are based on NSPS Subpart JJJJ limits and CO and VOC emission factors are based on manufacturer's data for LPG combustion. Emissions of PM and SO_2 are taken from AP-42 (7/00), Section 3.2. Since PM is from natural gas or propane combustion, $PM_{2.5}$ is assumed equal to PM. 500 hours per year operations were used.

Engine ID	Rated Horsepower	Pollutant	Emission Factor	Emissions	
				lb/hr	TPY
GEN2 (On-Site Energy / Generac 6.8 GN)	147-hp (1.24 MMBTUH)	NOx	2.0 g/hp-hr	0.65	0.16
		CO	4.0 g/hp-hr	1.30	0.32
		VOC	1.0 g/hp-hr	0.32	0.08
		SO_2	0.0006 lb/MMBTU	0.01	0.01
		PM_{10} / $PM_{2.5}$	0.0194 lb/MMBTU	0.02	0.01
GEN3 (Power Solutions / Olympian G25LTA)	40-hp (0.38 MMBTUH)	NOx	10 g/hp-hr	0.88	0.22
		CO	387 g/hp-hr	34.13	8.53
		VOC	0.0296 lb/MMBTU	0.01	0.01
		SO_2	0.0006 lb/MMBTU	0.01	0.01
		PM_{10} / $PM_{2.5}$	0.0194 lb/MMBTU	0.01	0.01
GEN4 (Southwest Security Building / Generac 1.5 RG025)	49-hp (0.43 MMBTUH)	NOx	10 g/hp-hr	1.07	0.27
		CO	132.7 g/hp-hr	14.35	3.58
		VOC	1.95 g/hp-hr	0.21	0.05
		SO_2	0.00145 lb/MMBTU	0.01	0.01
		PM_{10} / $PM_{2.5}$	0.0480 lb/MMBTU	0.09	0.02

EUG 19 A2 Emergency Generator Diesel Engine Subject to NESHAP Subpart ZZZZ
Estimates of emissions from the emergency generator are based on 500 hours of operations per year, with emission factors from Table 3.3-1 of AP-42 (10/96).

Point ID	Emission Unit	PM_{10}		SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
GEN	460-hp Cummins KT-1150-G Emergency Generator	1.1	0.3	0.9	0.2	14.3	3.6	1.2	0.3	3.1	0.8

EUG 19A Emergency Engine Firewater Pumps Subject to NSPS Subpart IIII
Estimates of emissions from the fire water pumps are based on 500 hours of operations per year, with emission limits of NSPS Subpart IIII.

Point ID	Emission Unit	PM_{10}		SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
PUMP	150-hp Cummins CFP5E-F50 Fire Pump	0.1	0.1	0.3	0.1	1.0	0.3	0.1	0.1	1.2	0.3
PUMP2	305-hp John Deere JU6H-UFADX8 Fire Pump	0.1	0.01	0.7	0.1	2.0	0.1	2.0	0.1	1.8	0.1

EUG 20 Gasoline Tank
VOC emissions are based on an annual throughput of 6,430 gallons, vapor pressure of 6.6 psia, and molecular weight of 66.

FACILITY-WIDE CRITERIA POLLUTANT EMISSION SUMMARY (PTE)

EUG	Description	PM_{10}		SO_2		NO_X		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
EUG 2	Ammonia Plant #1	8.02	31.49	0.95	3.73	215.20	500.86	5.80	22.79	88.61	348.08
	Ammonia Plant #2	10.06	32.31	1.19	3.83	270.00	173.45	7.28	23.38	111.18	357.10
EUG 3	Heaters/Boilers > 50 MMBTUH	1.8	8.22	0.14	0.64	33.6	147.16	0.91	3.97	20.76	90.90
EUG 4	Heaters/Boilers < 50 MMBTUH	0.8	3.2	0.06	0.2	9.8	42.6	0.6	2.4	8.2	35.8
EUG 5	No. 1 Urea Plant Conditioning Agent Storage Tank	--	--	--	--	--	--	2.72	0.14	--	--
EUG 6	No. 1 Urea Plant Granulators	19.81	86.76	--	--	--	--	8.10	10.87	--	--
EUG 7	No. 1 Urea Plant Synthesis Vents	1.87	7.92	--	--	--	--	--	--	3.87	16.41

EUG	Description	PM_{10}		SO_2		NO_X		VOC		CO	
		lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
EUG 9	No. 2 Ammonia Cooling Tower	0.05	0.22	--	--	--	--	--	--	--	--
EUG 10	CO_2 Stripping Towers	--	--	--	--	--	--	--	--	11.6	50.8
EUG 11	Nitric Acid Plant	--	--	--	--	47.5	25.5	--	--	--	--
EUG 12	AN Plant	2.6	11.0	--	--	--	--	--	--	0.1	0.5
EUG 13	Flares	--	--	0.06	0.06	496.98	21.60	80.64	4.66	30.66	4.11
EUG 14	Plant Fugitives	1.40	2.85	--	--	--	--	--	--	--	--
EUG 15	Start-up/Shutdown Vents	--	--	--	--	--	--	203.5	*	21,925.6	690.6
EUG 16	No. 1 Urea Plant Cooling Tower No. 2	0.42	1.84	--	--	--	--	--	--	--	--
EUG 17	Insignificant Activities	1.78	5.81	0.02	0.04	0.5	2.1	2296.7	32.39	0.2	0.53
EUG 18	Emergency Engines (JJJJ Subject)	0.12	0.04	0.03	0.03	2.61	0.65	0.54	0.14	49.78	12.43
EUG 19 / 19A	Diesel Engines	1.4	0.4	1.9	0.4	17.3	4.0	3.3	0.5	6.1	1.2
EUG 20	Vehicle Fueling (Gasoline Tank)	--	--	--	--	--	--	--	0.14	--	--
EUG 21	No. 2 Urea Plant Synthesis Vent	0.05	0.20	--	--	--	--	--	--	3.08	12.83
EUG 22	No. 2 Urea Plant Granulator	6.04	26.45	--	--	--	--	11.40	18.95	--	--
EUG 23	No. 2 Urea Plant Boiler	3.35	14.69	0.26	1.16	20.25	88.70	2.43	10.63	16.65	72.93
	No. 2 Urea Plant Boiler 2	0.76	3.33	0.55	2.41	4.50	19.71	0.55	2.41	3.70	16.21
EUG 25	No. 2 Urea Plant Cooling Tower	0.31	1.36	--	--	--	--	--	--	--	--
EUG 26	No. 2 Urea Plant Fugitives	0.18	0.26	--	--	--	--	--	--	--	--
EUG 27	New Haul Roads	0.09	0.38	--	--	--	--	--	--	--	--
TOTALS		**60.9**	**238.7**	**5.16**	**12.50**	**1118.2**	**1026.33**	**2624.47**	**133.37**	**22280.1**	**1710.43**

FACILTY-WIDE HAP EMISSIONS SUMMARY (PTE)

Emission Unit	Formaldehyde		Methanol*	
	lb/hr	TPY	lb/hr	TPY
EUG 1	--	--	--	*
EUG 2	0.08	0.31	--	--
	0.10	0.32	--	--
EUG 3	0.01	0.03	--	--
	0.01	0.03	--	--
EUG 4	0.005	0.02	--	--
EUG 5	2.72	0.14	--	--
EUG 6	0.35	1.53	7.8	*
EUG 15	--	--	203.5	*
EUG 17	2.89	0.49	*	*
EUG 18	0.04	0.01	--	--
EUG 19	0.01	0.01	--	--
EUG 22	0.76	3.34	9.6	*
EUG 23	0.03	0.14	--	--
TOTALS	**7.01**	**6.36**	**220.90**	**9.9**

* Methanol emissions are included in the plant-wide cap, which allows any one source to emit up to 9.9 TPY so long as all sources combined emit less than 9.9 TPY. The cap is addressed in the Specific Conditions for EUG 1.

POTENTIAL GREENHOUSE GAS EMISSIONS

Activity	CO_2-Equivalent Emissions, TPY
No. 1 Ammonia Plant	781,829
No. 2 Ammonia Plant	873,809
Nitric Acid Plant	1,142
Primary Reformer No. 1	494,565
Primary Reformer No. 2	507,378
No. 2 Urea Plant Boiler 2	115,194
No. 1 Urea Boiler A	43,048
No. 1 Urea Boiler B	43,048
Ammonia Unit Start-up Heater No. 1	16,912
Ammonia Unit Start-up Heater No. 2	16,912
Diesel-fired Emergency Engines	172
Gas-fired Emergency Engines	62
No. 2 Urea Plant Boiler	230,614
No. 2 Urea Plant Boiler 2	51,288
TOTALS	**3,060,779**

*The emissions above were estimated using the methodologies under 40 CFR Part 98.

- **PSD Emissions Change Analysis**

The first step in the major modification analysis is to identify whether the project is a physical change or change in the method of operation and to determine the extent of the proposed change. The next step is to determine the total emissions change from emissions units that are newly constructed, that are modified because they either experience a physical change or change in method of operation with a resulting emissions increase, or that are non-modified but are otherwise affected by the project with respect to an emissions increase. The total emissions increase for any regulated NSR pollutant is the sum of the individual unit emissions increases and decreases that are directly attributable to the project. The calculated project emissions increase is significant if it equals or exceeds the annual TPY significant emission rate for that pollutant. These PSD significant emission rates are identified in OAC 252:100-8-31. Pursuant to EPA's March 2018 guidance (Scott Pruitt Memo, "Project Emissions Accounting Under the New Source Review Preconstruction Permitting Program") and the proposed rule incorporating this guidance into Federal PSD regulations signed on August 1, 2019, KFE is including the emission decrease associated with shutting down an emissions unit as part of the project in the sum of the total emissions increase.

"Baseline actual emissions" (BAE) for an existing emissions unit are calculated as:

> *"... the average rate in TPY, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 10-year period immediately preceding either the date the owner or operator begins actual construction of the project, or the date a complete permit application is received by the Director for a permit required either under this Part or under a plan approved by the Administrator, whichever is earlier, except that the 10 year period shall not include any period earlier than November 15, 1990."*

For baseline actual emissions, although the regulations allow KFE to utilize different baseline periods for each pollutant, KFE has chosen a 24-month baseline period of January 1, 2017, through December 31, 2018, for all regulated NSR pollutants.

The BAE calculations include fugitive emissions and emissions associated with start-ups, shutdowns, and malfunctions.

"Projected actual emissions" (PAE) are defined as:

> *"Projected actual emissions means the maximum annual rate, in TPY, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit that regulated NSR pollutant, and full utilization of the unit would result in a significant emissions increase, or a significant net emissions increase at the major stationary source."*

PAE are calculated as follows:

> *"(i) Shall consider all relevant information, including but not limited to, historical operational data, the company's own representations, the company's expected business activity and the company's highest projections of business activity, the company's filings with the State or Federal regulatory authorities, and compliance plans under the approved State Implementation Plan; and*
> *(ii) Shall include fugitive emissions to the extent quantifiable and emissions associated with startups, shutdowns, and malfunctions; and*
> *(iii) Shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that are also unrelated to the particular project, including any increased utilization due to product demand growth; or*
> *(iv) In lieu of using the method set out in paragraphs (B)(i) through (iii) of this section, may elect to use the emissions unit's potential to emit, in TPY."*

With respect to paragraph (*i*), KFE has reviewed historical operating rates and business and regulatory projections that impact future operating activity and has considered this information in determining projected actual emissions at each modified and non-modified project-affected existing unit that does not otherwise use a PTE calculation per paragraph (*iv)*. Specifically, KFE has projected the highest actual annual throughput (*e.g.*, heat input) that would be expected for each applicable existing emissions unit. The annual throughput is multiplied by an emissions factor representative of expected future operation. The emission factors used for the projected emissions are generally also representative of the baseline period unless the unit is modified in such a way that the post-project emissions factor will be different. For each modified and non-modified project-affected unit, KFE also has considered fugitive emissions and emissions associated with start-ups, shutdowns and malfunctions, as applicable, as required by paragraph (*ii*).

Paragraph (*iii)* describes what is often referred to as the "demand growth exclusion" or "excludable emissions." The excludable portion of the projected actual emissions at an existing unit must meet two restrictions: 1) the excludable emissions could have been accommodated by the existing emissions unit during the baseline period, and 2) the excludable emissions are unrelated to the particular project.

In the preamble to the rule that promulgated the demand growth exclusion, EPA described the exclusion as follows:

> *"The adjustment to the projected actual emissions allows you to exclude from your projection only the amount of the emissions increase that is not related to the physical or operational change(s). In comparing your projected actual emissions to the units' baseline actual emissions, you only count emissions increases that will result from the project. For example, as with the electric utility industry, you may be able to attribute a portion of your emissions increase to a growth in demand for your product if you were able to achieve this higher level of production during the consecutive 24-month period you selected to establish the baseline actual emissions, and the increased demand for the product is unrelated to the change." (67 FR 80196)*

EPA has affirmed that the excludable amount cannot be based solely on an assumption that the "unit 'could' have emitted up to its permitted amount during the baseline period and this is the amount that can be excluded from the PAE." Rather, the "emissions that may be excluded are limited by the proposed operating conditions used to project emissions into the future." (April 20, 2010, letter from Ms. Diane McNally with EPA Region III to Mr. Mark Weikszner of the Pennsylvania Department of Environmental Protection.) The source shall "[e]xamine the portion of post-change emissions and determine if any of such emissions above the baseline are not related to the project. If any of the emissions are not related, and the emissions unit(s) could have emitted at this level before the change if operated as projected, then those emissions may be excluded from the PAE calculation."

EPA has also described potential methods that can be employed to demonstrate that an emissions unit was capable of accommodating a particular operating level during the baseline period. One method is to "identify actual production rates over some period of time that the unit could consistently achieve, and then annualize those rates." An example EPA has provided is annualizing "a time period where the unit has a peak production rate… (so long as that rate could be consistently achieved)" and adjusting that rate "for any required outages."

Further, EPA has confirmed for the demand growth exclusion that a permittee "may use the highest demonstrated average monthly operating level during the baseline period as an approximation of the level of operation that the units 'could have accommodated' during the baseline period."

For excludable emissions associated with existing emissions units that are affected by the project and that apply the PAE approach, the excludable operating rate (*i.e.*, heat input, process rate) at each existing emissions unit is equal to the projected operating rate without the project if the unit had the capacity to accommodate the higher operating rate. The projected operating rates estimated by KFE without consideration for the proposed project reflect continued optimization of the Enid Expansion Project into the overall facility operations. KFE considered using the highest monthly activity level during the baseline period as the expected future sustained rate without the proposed project. However, where KFE calculated the excludable emissions based on operating rate, a more conservative approach was chosen that includes use of an annual utilization factor to determine the levels of operation the process units could have accommodated. Specifically, a ninety-five percent annual utilization factor is applied to each emission unit's demonstrated monthly throughput documented during the baseline period to account for expected future performance while realistically considering maintenance, repairs, and shutdowns that are projected to occur during the year. In summary, this annualized level represents the expected future operating level of each existing emissions unit that is unrelated to the proposed project and that the unit was capable of accommodating during the baseline period.

The difference between the projected actual emissions, as adjusted for project-unrelated excludable emissions, and the baseline actual emissions constitutes the emissions increase from the modified and non-modified project-affected existing emissions units.

BASELINE ACTUAL EMISSIONS (BAE)

Emission Unit	EUG	NOx TPY	SO_2 TPY	CO TPY	PM_{10} TPY	$PM_{2.5}$ TPY	VOC TPY	GHG TPY CO_2e
Ammonia Plant #1 Primary Reformer	2	300.64	1.74	13.43	22.05	22.05	15.96	346,584
Ammonia Plant #2 Primary Reformer		98.43	1.56	3.04	19.72	19.72	14.27	309,904
No. 1 Urea Plant Conditioning Agent Storage Tank	5	--	--	--	--	--	0.08	--
No. 1 Urea Plant Granulators - Granulator A	6	--	--	--	9.22	9.22	1.86	--
No. 1 Urea Plant Granulators - Granulator B		--	--	--	10.18	10.18	1.87	--
No. 1 Urea Plant Granulators - Granulator C		--	--	--	11.17	11.17	1.87	--
No. 1 Urea Plant Synthesis Vents - High-Pressure	7	--	--	1.61	2.64	2.32	--	--
No. 1 Urea Plant Synthesis Vents - Low-Pressure		--	--	1.61	0.88	0.77	--	--
No. 2 Ammonia Plant Cooling Towers – Old Cells	9	--	--	--	1.74	0.01	--	--
No. 2 Ammonia Plant Cooling Towers – New Cells		--	--	--	0.22	0.001	--	--
Fugitives - No. 1 Urea Plant Material Storage	14	--	--	--	0.31	0.21	--	--
Fugitives - No. 1 Urea Plant Material Handling		--	--	--	0.64	0.44	--	--
Fugitives - No. 1 Urea Plant Railcar Loading		--	--	--	0.32	0.22	--	--
No. 1 Urea Plant Haul Roads	17	--	--	--	0.23	0.06	--	--
No. 1 Ammonia Plant Cooling Towers		--	--	--	1.47	0.01	--	--
No. 2 Urea Plant Boiler	23	21.78	0.50	31.19	6.28	6.28	4.55	98,718
Ammonia Unit Startup Boiler	3	42.19	0.12	17.37	1.57	1.57	1.14	24,701
No. 2 Urea Conditioning Agent Storage Tank	17	--	--	--	--	--	0.21	--
DEF-US Blending, Storage and Loadout Tanks	17	--	--	--	--	--	0.12	--
No. 2 Urea Plant Synthesis Vent	21	--	--	12.83	0.20	0.20	--	--
No. 2 Urea Plant Granulator	22	--	--	--	26.45	26.45	18.95	--
No. 2 Urea Plant Fugitive PM - No. 2 Urea Material Loading	26	--	--	--	0.04	0.03	--	--
No. 2 Urea Plant Fugitive PM - No. 2 Urea Material Storage		--	--	--	0.12	0.08	--	--

Emission Unit	EUG	NOx TPY	SO_2 TPY	CO TPY	PM_{10} TPY	$PM_{2.5}$ TPY	VOC TPY	GHG TPY CO_2e
No. 2 Urea Plant Fugitive PM - No. 2 Urea Material Transfer		--	--	--	0.11	0.07	--	--
New Haul Roads (includes No. 2 Urea and DEF-US Haul roads)	27	--	--	--	0.38	0.09	--	--
New No. 2 Urea Plant Boiler 2	23	--	--	--	--	--	--	--
New No. 2 Urea Plant Cooling Tower 2	25	--	--	--	0.86	0.01	--	--
Total BAE		**463.04**	**3.92**	**81.08**	**116.81**	**111.16**	**60.89**	**779,907**

PROJECTED ACTUAL EMISSIONS (PAE) FOR EXISTING UNITS / POTENTIAL-TO-EMIT (PTE) FOR NEW UNITS

Emission Unit	EUG	NOx TPY	SO_2 TPY	CO TPY	PM_{10} TPY	$PM_{2.5}$ TPY	VOC TPY	GHG TPY CO_2e
Ammonia Plant #1 Primary Reformer	2	460.46	2.29	27.20	28.95	28.95	20.95	455,004
Ammonia Plant #2 Primary Reformer		140.17	2.06	12.26	26.11	26.11	18.90	410,338
No. 1 Urea Plant Conditioning Agent Storage Tank	5	--	--	--	--	--	0.11	--
No. 1 Urea Plant Granulators - Granulator A	6	--	--	--	12.94	12.94	2.61	--
No. 1 Urea Plant Granulators - Granulator B		--	--	--	14.17	14.17	2.61	--
No. 1 Urea Plant Granulators - Granulator C		--	--	--	15.56	15.56	2.61	--
No. 1 Urea Plant Synthesis Vents - High-Pressure	7	--	--	2.30	3.77	3.32	--	--
No. 1 Urea Plant Synthesis Vents - Low-Pressure		--	--	2.30	1.26	1.10	--	--
No. 2 Ammonia Plant Cooling Towers – Old Cells	9	--	--	--	2.04	0.01	--	--
No. 2 Ammonia Plant Cooling Towers – New Cells		--	--	--	0.22	0.01	--	--
Fugitives - No. 1 Urea Plant Material Storage	14	--	--	--	0.83	0.57	--	--
Fugitives - No. 1 Urea Plant Material Handling		--	--	--	1.16	0.80	--	--
Fugitives - No. 1 Urea Plant Railcar Loading		--	--	--	0.58	0.40	--	--
No. 1 Urea Plant Haul Roads	17	--	--	--	0.10	0.02	--	--
No. 1 Ammonia Plant Cooling Towers		--	--	--	2.04	0.01	--	--
No. 2 Urea Plant Boiler	23	83.77	1.10	68.88	13.87	13.87	10.04	217,976
Ammonia Unit Startup Boiler	3	--	--	--	--	--	--	--
No. 2 Urea Conditioning Agent Storage Tank	17	--	--	--	--	--	0.21	--
DEF-US Blending, Storage and Loadout Tanks	17	--	--	--	--	--	0.28	--
DEF-US Truck and Rail Loadout	17	--	--	--	--	--	--	--
No. 2 Urea Plant Synthesis Vent	21	--	--	12.83	0.20	0.20	--	--
No. 2 Urea Plant Granulator	22	--	--	--	26.45	26.45	18.95	--
No. 2 Urea Plant Fugitive PM - No. 2 Urea Material Loading	26	--	--	--	0.04	0.03	--	--
No. 2 Urea Plant Fugitive PM - No. 2 Urea Material Storage		--	--	--	0.12	0.08	--	--

Emission Unit	EUG	NOx TPY	SO_2 TPY	CO TPY	PM_{10} TPY	$PM_{2.5}$ TPY	VOC TPY	GHG TPY CO_2e
No. 2 Urea Plant Fugitive PM - No. 2 Urea Material Transfer		--	--	--	0.11	0.07	--	--
New Haul Roads (includes No. 2 Urea and DEF-US Haul roads)	27	--	--	--	0.38	0.09	--	--
New No. 2 Urea Plant Boiler 2	23	19.71	2.41	16.21	3.33	3.33	2.41	51,288
No. 2 Urea Plant Cooling Tower	25	--	--	--	1.36	0.01	--	--
Total Post-Project Emissions of New / Modified/ Affected Units		**704.11**	**7.86**	**141.98**	**155.60**	**148.11**	**79.68**	**1,134,606**

EXCLUDABLE EMISSIONS: "CAPABLE OF ACCOMMODATING" (COA) OR "DEMAND GROWTH EXCLUSION" (DGE)

Emission Unit	EUG	NOx TPY	SO_2 TPY	CO TPY	PM_{10} TPY	$PM_{2.5}$ TPY	VOC TPY	GHG TPY CO_2e
Ammonia Plant #1 Primary Reformer	2	155.25	0.52	13.50	6.61	6.61	4.79	103,915
Ammonia Plant #2 Primary Reformer		40.36	0.48	9.10	6.13	6.13	4.44	96,371
No. 1 Urea Plant Conditioning Agent Storage Tank	5	--	--	--	--	--	0.03	--
No. 1 Urea Plant Granulators - Granulator A	6	--	--	--	3.59	3.59	0.73	--
No. 1 Urea Plant Granulators - Granulator B		--	--	--	3.86	3.86	0.71	--
No. 1 Urea Plant Granulators - Granulator C		--	--	--	4.24	4.24	0.71	--
No. 1 Urea Plant Synthesis Vents - High-Pressure	7	--	--	0.67	1.10	0.97	--	--
No. 1 Urea Plant Synthesis Vents - Low-Pressure		--	--	0.67	0.37	0.32	--	--
No. 2 Ammonia Plant Cooling Towers – Old Cells	9	--	--	--	--	--	--	--
No. 2 Ammonia Plant Cooling Towers – New Cells		--	--	--	--	--	--	--
Fugitives - No. 1 Urea Plant Material Storage	14	--	--	--	0.23	0.16	--	--
Fugitives - No. 1 Urea Plant Material Handling		--	--	--	0.48	0.33	--	--
Fugitives - No. 1 Urea Plant Railcar Loading		--	--	--	0.24	0.17	--	--
No. 1 Urea Plant Haul Roads	17	--	--	--	--	--	--	--
No. 1 Ammonia Plant Cooling Towers		--	--	--	--	--	--	--
No. 2 Urea Plant Boiler	23	40.52	0.32	20.03	4.03	4.03	2.92	63,402
Ammonia Unit Startup Boiler	3	--	--	--	--	--	--	--
No. 2 Urea Conditioning Agent Storage Tank	17	--	--	--	--	--	--	--
DEF-US Blending, Storage and Loadout Tanks	17	--	--	--	--	--	--	--
No. 2 Urea Plant Synthesis Vent	21	--	--	--	--	--	--	--
No. 2 Urea Plant Granulator	22	--	--	--	--	--	--	--
No. 2 Urea Plant Fugitive PM - No. 2 Urea Material Loading	26	--	--	--	--	--	--	--
No. 2 Urea Plant Fugitive PM - No. 2 Urea Material Storage		--	--	--	--	--	--	--

Emission Unit	EUG	NOx TPY	SO_2 TPY	CO TPY	PM_{10} TPY	$PM_{2.5}$ TPY	VOC TPY	GHG TPY CO_2e
No. 2 Urea Plant Fugitive PM - No. 2 Urea Material Transfer		--	--	--	--	--	--	--
New Haul Roads (includes No. 2 Urea and DEF-US Haul roads)	27	--	--	--	--	--	--	--
New No. 2 Urea Plant Boiler 2	23	--	--	--	--	--	--	--
New No. 2 Urea Plant Cooling Tower 2	25	--	--	--	--	--	--	--
Total Excludable Emissions		**236.13**	**1.32**	**43.97**	**30.88**	**30.41**	**14.32**	**263,688**

EMISSIONS CHANGES SUMMARY

Pollutant	NOx TPY	SO_2 TPY	CO TPY	PM_{10} TPY	$PM_{2.5}$ TPY	VOC TPY	GHG TPY CO_2e
PAE / PTE	704.11	7.86	141.98	155.60	148.11	79.68	1,134,606
BAE	463.04	3.92	81.08	116.81	111.16	60.89	779, 907
Excludable Emissions	236.13	1.32	43.97	30.88	30.41	14.32	263,688
Total Project Emissions Increases	4.94	2.62	16.93	7.91	6.54	4.47	91,011
PSD Significant Emissions Rate (SER)	40	40	100	15	10	40	75,000
Does the Project Emission Increase Equal to or Exceed the PSD Significant Emission Rate?	No	No	No	No	No	No	Yes*

*NOTE: Since no other pollutant than GHG is above PSD significance levels, PSD review of GHG emissions is not required.

SECTION VI. INSIGNIFICANT ACTIVITIES

The insignificant activities identified in the application submitted July 30, 2004, and listed in OAC 252:100-8, Appendix I, are summarized below. Additionally, the plant may operate sources of trivial emissions that are not required to be listed in the permit or permit application. Appropriate recordkeeping of activities indicated below with an asterisk ("*") is specified in the Specific Conditions.

1. Various space heaters, boilers, process heaters, and emergency flares less than or equal to 5 MMBTUH heat input (commercial natural gas). In addition, the plant operates one (1) glycol dehydrator reboiler rated at 1.5 MMBTUH. Other space heaters, boilers, or process heaters may be used in the future.

2. Emissions from stationary internal combustion engines rated less than 50-hp output. None identified but may be used in the future.

3. Emissions from condensate tanks with a design capacity of 400 gallons or less in ozone attainment areas. None identified but may be used in the future.

4. * Emissions from storage tanks constructed with a capacity less than 39,894 gallons which store VOC with a vapor pressure less than 1.5 psia at maximum storage temperature. The plant operates one (1) 2,961 gallon compressor oil storage tank, one (1) 1,125 gallon diesel storage tank, one (1) 250 gallon diesel fuel tank, and one (1) 576 gallon diesel fuel tank, which are in this category. A 12,000-gallon diesel tank is being added in this permit. Other similar tanks may be used in the future.

5. Cold degreasing operations utilizing solvents that are denser than air. There are currently seven (7) parts washers located on-site using solvents that are denser than air, and others may be added in the future.

6. Welding and soldering operations utilizing less than 100 pounds of solder and 53 tons per year of electrode. These activities are conducted as a part of routine maintenance, which are considered trivial activities and records will not be required.

7. Hazardous waste and hazardous materials drum staging areas.

8. Sanitary sewage collection and treatment facilities other than incinerators and Publicly Owned Treatment Works (POTW). Stacks or vents for sanitary sewer plumbing traps are also included (i.e. lift station).

9. Exhaust systems for chemical, paint, and/or solvent storage rooms or cabinets, including hazardous waste satellite (accumulation) areas. The facility has exhaust systems for chemical, paint, and/or solvent storage rooms or cabinets, including hazardous waste satellite (accumulation) areas, and others may be used in the future.

10. Hand wiping and spraying of solvents from containers with less than 1 liter capacity used for spot cleaning and/or degreasing in ozone attainment areas. None identified but may be used in the future.

11. * Activities having the potential to emit no more than 5 TPY (actual) of any criteria pollutant. The plant Insignificant Activities are listed in EUG-17.

SECTION VII. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions) [Applicable]
Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference) [Applicable]
This subchapter incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations. These requirements are addressed in the "Federal Regulations" section.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
Subchapter 3 enumerates the primary and secondary ambient air quality standards and the significant deterioration increments. At this time, all of Oklahoma is in attainment of these standards.

OAC 252:100-5 (Registration, Emission Inventory, and Annual Operating Fees) [Applicable]
The owner or operator of any facility that is a source of air emissions shall submit a complete emission inventory annually on forms obtained from the Air Quality Division. Emission inventories were submitted and fees paid for previous years as required.

OAC 252:100-8 (Permits for Part 70 Sources) [Applicable]
Part 5 includes the general administrative requirements for part 70 permits. Any planned changes in the operation of the facility which result in emissions not authorized in the permit and which exceed the "Insignificant Activities" or "Trivial Activities" thresholds require prior notification to AQD and may require a permit modification. Insignificant activities mean individual emission units that either are on the list in Appendix I (OAC 252:100) or whose actual calendar year emissions do not exceed the following limits:

- 5 TPY of any one criteria pollutant
- 2 TPY of any one hazardous air pollutant (HAP) or 5 TPY of multiple HAPs or 20% of any threshold less than 10 TPY for a HAP that the EPA may establish by rule

Emission limitations for all the sources are taken from the permit application and previous permit.

OAC 252:100-9 (Excess Emissions Reporting Requirements) [Applicable]
Except as provided in OAC 252:100-9-7(a)(1), the owner or operator of a source of excess emissions shall notify the Director as soon as possible but no later than 4:30 p.m. the following working day of the first occurrence of excess emissions in each excess emission event. No later than thirty (30) calendar days after the start of any excess emission event, the owner or operator of an air contaminant source from which excess emissions have occurred shall submit a report for each excess emission event describing the extent of the event and the actions taken by the owner or operator of the facility in response to this event. Requests for mitigation, as described in OAC 252:100-9-8, shall be included in the excess emission event report. Additional reporting may be required in the case of ongoing emission events and in the case of excess emissions reporting required by 40 CFR Parts 60, 61, or 63.

OAC 252:100-13 (Open Burning) [Applicable]
Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter. KFE on occasion conducts fire training for plant personnel. KFE notifies the local fire department of these activities prior to conducting the training.

OAC 252:100-19 (Particulate Matter) [Applicable]
Section 19-12 regulates PM emissions from various industrial processes excluding indirect-fired fuel-burning units. Allowable PM emission rates are specified based on process weight rate. The following table compares process weight rate to the applicable allowable rates.

COMPARISON OF PROCESS PM EMISSIONS TO ALLOWABLE RATES OF OAC 252:100-19

Unit	Process Weight Rate, TPH	Allowable PM Emission Rate of OAC 252:100-19, lb/hr	Anticipated PM Emission Rate, lb/hr
No. 1 Urea Granulator A	21.53	32.06	6.60
No. 1 Urea Granulator B	21.53	32.06	6.60
No. 1 Urea Granulator C	21.53	32.06	6.60
No. 1 Urea High Pressure Urea Synthesis Vent	66.67	47.30	1.40
No. 1 Urea Low Pressure Urea Synthesis Vent	66.67	47.30	0.47
No. 2 Urea Synthesis Vent	106	51.9	0.05
No. 2 Urea Granulator	141	54.8	6.04
No. 1 Urea Material Handling	425	67.03	Negligible
No. 1 Urea Material Loading	425	67.03	Negligible
No. 2 Urea Plant Loading (annual)	141	54.79	0.04

Section 19-4 specifies allowable PM emissions from fuel-burning units based on heat input and Appendix C. For fuel-burning equipment with a heat input of greater than 10 MMBTUH but less than 1,000 MMBTUH, the PM limitation is derived by the following equation.

$$E = 1.0428080X^{-0.238561}$$

Where:

E = allowable total particulate matter emissions in pounds per MMBTU and
X = the maximum heat input in MMBTU per hour.

COMPARISON OF PROCESS PM EMISSIONS TO ALLOWABLE RATES OF OAC 252:100-19

Unit	Heat Input Capacity MMBTU	Allowable PM Emission Rate of OAC 252:100-19, lb/MMBTU	Anticipated PM Emission Rate, lb/MMBTU
No. 1 Ammonia Plant Primary Reforner #1	965	0.20	0.0076
No. 1 Ammonia Plant Primary Reforner #2	990	0.20	0.0076
No. 1 Urea Plant Boiler A	84	0.36	0.0076
No 1 Urea Plant Boiler B	84	0.36	0.0076
Ammonia Plant No. 1 Start-up Heater	33	0.45	0.0076
Ammonia Plant No. 2 Start-up Heater	33	0.45	0.0076
No. 2 Urea Plant Boiler 1	450	0.24	0.0076
No. 2 Urea Plant Boiler 2	99.9	0.35	0.0076

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]

No discharge of greater than 20% opacity is allowed except for short-term occurrences that consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. Due to the types of fuel burned (natural gas or ammonia plant purge gas) or specific process operations, the following EUGs have little potential to generate opacity (excluding steam, fog, or icy mist from the presence of uncombined water) during normal operations: EUG 2, EUG 3, EUG 4, EUG 5, EUG 7, EUG 10, EUG 13, EUG 15, EUG 17, EUG 21, EUG 22, EUG 23, EUG 25, EUG 26, and EUG 27. Therefore, specific monitoring for these sources is not necessary. Opacity requirements for sources that may have the potential to generate opacity (EUG 6, EUG 12, and EUG 14) are addressed in the specific conditions of this permit. Units which are subject to an opacity standard under NSPS would not be subject to Subchapter 25, however, there are not any affected units.

OAC 252:100-29 (Fugitive Dust) [Applicable]

No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. The handling and loading of granular urea takes place within enclosed or shrouded areas to minimize the potential for the generation of fugitive dust. Open-bodied trucks and railcars, which are used to transport urea, are covered prior to leaving the plant boundaries. Primary plant roadways are speed-controlled, paved and maintained.

OAC 252:100-31 (Sulfur Compounds) [Applicable]
Part 5 limits sulfur dioxide emissions from new fuel-burning equipment (constructed after July 1, 1972). For gaseous fuels the limit is 0.2 lb/MMBTU heat input averaged over 3 hours. For fuel gas having a gross calorific value of 1,000 BTU/SCF, this limit corresponds to fuel sulfur content of 1,203 ppmv. The permit requires the use of pipeline natural gas as defined in Part 72 having 0.5 grains TRS/100 scf to ensure compliance with Subchapter 31. The South Emergency Firewater Pump (PUMP) and North Emergency Firewater Pump (PUMP2) are subject to a limit for liquid fuels of 0.8 lb/MMBTU. Since the unit is subject to NSPS Subpart IIII, fuel is limited to 15 ppm, or 0.0015 lb/MMBTU.

OAC 252:100-33 (Nitrogen Oxides) [Applicable]
This subchapter limits new gas-fired fuel-burning equipment with rated heat input greater than or equal to 50 MMBTUH to emissions of 0.2 lb of NO_x per MMBTU, three-hour average. New fuel burning equipment is defined as fuel-burning equipment that was not in service on February 14, 1972 or any existing fuel burning equipment that was altered, replaced, or rebuilt after February 14, 1972 with some exceptions. For direct fired processes, new fuel burning equipment is defined as fuel-burning equipment that was not in service on July 1, 1977 or any existing fuel burning equipment that was altered, replaced, or rebuilt after July 1, 1977, resulting in an increase in NO_X emissions. The Ammonia Plant primary reformers were initially constructed in 1973 and 1975, which is in between the applicability dates for indirect fired and direct fired units. (KFE questions that those reformers would not be defined as "indirect" fuel-burning equipment, but agrees to the 0.2 lb/MMBTU limit; should any revision or reinterpretation of this rule occur, this statement becomes a reminder to re-evaluate applicability of Subchapter 33.) The following table compares NO_x emissions from the plant's fuel-burning equipment, as calculated above, to the limitations of Subchapter 33.

COMPARISON OF NOx EMISSIONS TO LIMITATIONS OF OAC 252:100-33

Unit	Heat Input Capacity, MMBTUH	NOx Emission Limitation of OAC 252:100-33, lb/MMBTU	Anticipated NOx Emission Rate, lb/MMBTU
Ammonia Plant Primary Reformer #1	1,076	0.2	0.2
Ammonia Plant Primary Reformer #2	1,350	0.2	0.2
No. 1 Urea Boiler A	84	0.2	0.2
No. 1 Urea Boiler B	84	0.2	0.2
No. 2 Urea Plt. Boiler	450	0.2	0.045
No. 2 Urea Plt. Boiler 2	99.9	0.2	0.045

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]
None of the following affected processes are part of this plant: gray iron foundry, blast furnace, basic oxygen furnace, petroleum catalytic reforming unit, or petroleum catalytic cracking unit.

OAC 252:100-37 (Volatile Organic Compounds) [Applicable]
Part 3 requires storage tanks constructed after December 28, 1974, with a capacity of 400 gallons or more and storing a VOC with a vapor pressure greater than 1.5 psia to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. This part applies to the 1,128 gallon gasoline storage tank, which is equipped with a permanent submerged fill pipe. The vapor pressure of diesel is less than 1.5 psia; therefore, Part 3 does not apply to the diesel tanks. The No. 1 Urea Plant conditioning agent storage tank (EUG 5) and the No. 2 Urea Plant condition agent tank (EUG 17) store a VOC with a vapor pressure less than 1.5 psia; therefore, Part 3 does not apply to this unit. Ammonia is inorganic, so ammonia storage is not affected by Part 3.
Part 3 requires loading facilities with a throughput equal to or less than 40,000 gallons per day to be equipped with a system for submerged filling of tank trucks or trailers if the capacity of the vehicle is greater than 200 gallons. This plant fills only vehicle gasoline tanks with capacities less than 200 gallons. Therefore, this requirement is not applicable.
Part 5 limits the VOC content of coatings used in coating lines or operations. This plant will not normally conduct coating or painting operations except for routine maintenance of the plant and equipment, which is exempt.
Part 7 also requires fuel-burning and refuse-burning equipment to be operated to minimize emissions of VOC. The fuel burning equipment at the plant is subject to this requirement.

OAC 252:100-42 (Toxic Air Contaminants (TAC)) [Applicable]
This subchapter regulates toxic air contaminants (TAC) that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained, unless a modification is approved by the Director. Since no AOC has been designated there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]
This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

The following Oklahoma Air Pollution Control Rules are not applicable to this facility:

OAC 252:100-8 Part 9	Major Sources Affecting Nonattainment Areas	not in area category
OAC 252:100-15	Mobile Sources	not in source category
OAC 252:100-17	Incinerators	not type of emission unit
OAC 252:100-23	Cotton Gins	not type of emission unit
OAC 252:100-24	Grain Elevators	not in source category
OAC 252:100-29-2	Fugitive Dust/Nonattainment Areas	not in area category
OAC 252:100-39	Nonattainment Areas	not in area category
OAC 252:100-47	Landfills	not in source category

SECTION VIII. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Applicable]

Emissions of several regulated pollutants exceed the major source level of 100 TPY for a listed source. However, PSD review is limited to determining the emissions changes. PSD will apply to any future project whose added emissions exceed the significance levels: CO 100 TPY, NO_X 40 TPY, SO_2 40 TPY, PM 25 TPY, PM_{10} 15 TPY, VOC 40 TPY, or GHG 75,000 TPY.

NSPS, 40 CFR Part 60 [Subparts Db, Dc, VVa, IIII, and JJJJ Applicable]

Subpart D (Steam Generating Units) regulates fossil fuel fired steam-generating units with a rated heat input above 250 MMBTUH. The auxiliary burner sections, which are used to generate steam, of the Primary Reformers (EU-101B1 and EU-101B2) are physically constrained to be less than 250 MMBTUH due to plant draft limitations. Therefore, NSPS Subpart D does not apply to EU-101B1 or EU-101B2.

Subpart Db (Steam Generating Units) regulates steam-generating units rated between 100 and 250 MMBTUH that commenced construction, reconstruction, or modification after June 19, 1984. The No. 2 Urea Plant boiler is rated at 450 MMBTUH and was constructed after June 19, 1984, and is subject to this subpart. The auxiliary burner section of the Primary Reformers (EU-101B1 and EU-101B2) is rated at a heat input capacity greater than 100 MMBTUH. However, these units were constructed prior to the effective date of this subpart and no reconstruction has occurred, nor have any emissions increases occurred as a result of a modification. Therefore, NSPS Subpart Db is not applicable except to the existing No. 2 Urea Plant boiler (450 MMBTUH). Since the No. 2 Urea Plant Boiler does not burn coal or No. 2 fuel oil, itis only subject to Sections 60.44b, 60.46b, 60.48b, and 60.49b of this subpart (standards of Subpart Db for SO_2 and PM do not apply to gas-fueled boilers). Requirements include:

- Compliance testing for nitrogen oxides (40 CFR §60.46b). The emission standard for oxides of nitrogen is 0.2 lb/MMBTU per §60.44b(a), including periods of start-up, shutdown and malfunction (§60.44b(h). Compliance with the NO_X standard is to be demonstrated on a rolling 30-day basis.
- Emissions monitoring for nitrogen oxides (40 CFR §60.48b). The applicant has installed a continuous emission monitor (CEM) to monitor NOx on the No. 2 Urea Plant boiler.
- Reporting and recordkeeping (40 CFR §60.49b). KFE will record natural gas usage and CEMs data.

Subpart Dc (Steam Generating Units) regulates steam-generating units rated between 10 and 100 MMBTUH that commenced construction, reconstruction, or modification after June 9, 1989. The proposed new No. 2 Urea Plant 2 boiler (99.9 MMBTUH) will be subject to Subpart Dc. As a gas-fired unit, it is subject only to requirements to keep records of fuel used. The Urea Boilers (EU-403A and EU-403B) are rated at a heat input capacity between 10 and 100 MMBTUH. However, these units were constructed prior to the effective date of this subpart and no reconstruction has occurred, nor have any emissions increases occurred as a result of a modification. Therefore, NSPS Subpart Dc is not applicable to the two existing boilers.

Subpart G (Nitric Acid Plants) regulates nitric acid plants that commenced construction, reconstruction, or modification after August 17, 1971, but before October 14, 2011. The nitric acid plant was originally constructed in 1968 and was relocated to the current site from Kennewick, Washington in 1990. 40 CFR §60.14(e) specifically excludes a relocation or change in ownership from the definition of modification. The nitric acid plant has not been reconstructed or modified since it was originally constructed in 1968. Therefore, NSPS Subpart G does not apply.

Subpart Ga (Nitric Acid Plants For Which Construction, Reconstruction, or Modification Commenced After October 14, 2011) regulates nitric acid plants that commenced construction, reconstruction, or modification after October 14, 2011. The nitric acid plant was originally constructed in 1968 and was relocated to the current site from Kennewick, Washington in 1990. 40 CFR §60.14(e) specifically excludes a relocation or change in ownership from the definition of modification. The nitric acid plant has not been reconstructed or modified since it was originally constructed in 1968. Therefore, NSPS Subpart Ga does not apply.

Subpart Kb (Volatile Organic Liquids Storage Vessels Which Commenced Construction, Reconstruction, Or Modification After July 23, 1984) regulates volatile organic materials storage tanks with a capacity above 19,183 gallons, which commenced construction, reconstruction, or modification after July 23, 1984. The 54,319-gallon No. 1 Urea conditioning agent storage tank (EU-D202) is above this de minimis level. However, the tank was constructed prior to 1984 and has not been reconstructed or modified since July 23, 1984. NSPS Subpart Kb applies to volatile organic materials with a vapor pressure greater than 3.5 kPa (0.5 psi). The conditioning agent has a vapor pressure of approximately 2.2 kPa at the anticipated maximum monthly average temperature of 90 degrees F. The Diesel tank is 12,000 gallons capacity, smaller than the 19,183 gallons capacity applicability threshold. Therefore, NSPS Subpart Kb does not apply.

Subpart VVa (Synthetic Organic Chemical Manufacturing For Which Construction, Reconstruction, or Modification Commenced After November 7, 2006) is applicable. Subpart VVa affects synthetic organic chemical manufacturing operations, which commenced construction, reconstruction, or modification after November 7, 2006. Urea is a listed chemical in 40 CFR §60.489a. However, per §60.480a(d)(3), if a facility produces only heavy liquid chemicals from heavy liquid feed or raw materials, it is not subject to §60.482a (LDAR). The No. 1 Urea Plant and the No. 2 Urea Plant are subject only to recordkeeping and reporting requirements under §60.486a(i) and §60.487a. Since the No. 2 Urea Plant is already subject to Subpart VVa, expansion of that unit does not constitute a "modification."

Subpart IIII (Stationary Compression Ignition Internal Combustion Engines) affects stationary compression ignition (CI) internal combustion engines (ICE) based on power and displacement ratings, depending on date of construction, beginning with those constructed after July 11, 2005. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. The A2 Emergency Generator Diesel Engine (GEN) at this facility pre-dates Subpart IIII. The Emergency Firewater Pumps (PUMP & PUMP2) are subject to this subpart.

Subpart JJJJ (Stationary Spark Ignition Internal Combustion Engines (SI-ICE)) promulgates emission standards for all new SI engines ordered after June 12, 2006, and all SI engines modified or reconstructed after June 12, 2006, regardless of size. The specific emission standards (either in g/hp-hr or as a concentration limit) vary based on engine class, engine power rating, lean-burn or rich-burn, fuel type, duty (emergency or non-emergency), and numerous manufacture dates. Engine manufacturers are required to certify certain engines to meet the emission standards and may voluntarily certify other engines. An initial notification is required only for owners and operators of engines greater than 500 HP that are non-certified. Emergency engines will be required to be equipped with a non-resettable hour meter and are limited to 100 hours per year of operation excluding use in an emergency (the length of operation and the reason the engine was in operation must be recorded). The emergency generators in EUG-18 are subject to the applicable emission standards and all applicable testing, monitoring, recordkeeping, and reporting requirements.

NESHAP, 40 CFR Part 61 [Subparts M and FF Applicable]

Subpart M (Asbestos) regulates asbestos from demolition and renovation activities. Prior to a demolition or renovation activity, owners or operators are required to inspect the affected facility or part of the facility where the renovation and demolition activity will occur for the presence of asbestos, including Category I and Category II nonfriable ACM. For demolition or renovation activities subject to this subpart, owners and operators are required to comply with the standards, including notification requirements, under §61.145.

Subpart FF (Benzene Waste Operations) regulates benzene contaminated wastewater at chemical manufacturing plants. The facility is not subject to control requirements of 40 CFR Part 61 Subpart FF because the total annual benzene quantity from facility wastewater streams is less than 1 Mg/yr. The plant is required to repeat the determination of total annual benzene quantity whenever there is a change in the process generating the waste that could cause the total annual benzene quantity to increase to 1 Mg/yr or more. The plant is also subject to recordkeeping requirements under §61.356 and reporting requirements under §61.357.

NESHAP, 40 CFR Part 63 [Subparts ZZZZ, CCCCCC, and VVVVVV Applicable]

Subparts F, G, H and I (Hazardous Organic NESHAP) affect major sources of HAPs. This plant is an area source rather than a major source.

Subpart FFFF (Miscellaneous Organic Chemicals) affects facilities which produce the listed organic chemicals. Ammonia, nitric acid, urea, and UAN are not among the listed chemicals.

Subpart ZZZZ (Reciprocating Internal Combustion Engines (RICE)). Owners and operators of new engines and reconstructed engines at area sources and of new or reconstructed engines with a site rating of less than or equal to 500 HP located at a major source (except new or reconstructed 4-stroke lean burn engines with a site rating of greater than or equal to 250 HP and less than or equal to 500 HP located at a major source) must meet the requirements of either 40 CFR Part 60 Subpart IIII (for CI engines) or 40 CFR Part 60 Subpart JJJJ (for SI engines); the engines in EUG-18 are subject to NSPS Subpart JJJJ. No further requirements apply for such engines under this part. Owners and operators of new or reconstructed 4SLB engines with a site rating of greater than or equal to 250 HP and less than or equal to 500 HP located at a major source are subject to the same MACT standards previously established for 4SLB engines above 500 HP at a major source, and must also meet the requirements of 40 CFR Part 60 Subpart JJJJ, except for the emissions standards for CO.

This subpart established requirements for existing stationary CI RICE located at area sources. A summary of these requirements for the A2 Emergency Generator Engine (GEN), South Emergency Firewater Pump (PUMP), and North Emergency Firewater Pump (PUMP2) located at this facility are shown following.

Engine Category	**Normal Operation @ 15% O_2**
Existing Emergency CI & Black Start CI	Change oil and filter every 500 hours of operation or annually, whichever one comes first; Inspect air cleaner every 1,000 hours of operation or annually, whichever one comes first; and Inspect all hoses and belts every 500 hours of operation or annually, whichever one comes first and replace as necessary.

Sources have the option to utilize an oil analysis program in order to extend the specified oil change requirements of this subpart. Initial compliance demonstrations must be conducted within 180 days after the compliance date. Owners and operators of a non-operational engine can conduct the performance test when the engine is started up again.

Other applicable requirements include:

1) The owner/operator must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop their own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
2) Existing emergency stationary RICE located at an area source of HAP emissions must install a non-resettable hour meter if one is not already installed.

Existing stationary CI RICE (EUG-19) located at an area source of HAP emissions must comply with the applicable emission limitations and operating limitations no later than May 3, 2013. The permit will require the facility to comply with all applicable requirements.

Subpart DDDDD, (Industrial, Commercial and Institutional Boilers and Process Heaters at major sources of HAPs) This facility is an "area" source of HAPs.

Subpart CCCCCC, (Gasoline Dispensing Facilities) establishes emission limitations and management practices for HAP emitted from the loading of gasoline storage tanks at gasoline dispensing facilities (GDF) located at an area source. GDF means any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle. The affected source includes each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank. This regulation applies to EUG 20.

If a GDF has a monthly throughput of less than 10,000 gallons of gasoline, the operator must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following:

1) Minimize gasoline spills;
2) Clean up spills as expeditiously as practicable;
3) Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use;

4) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.

Subpart JJJJJJ, (Industrial, Commercial, and Institutional Boilers) affects new and existing boilers located at area sources of HAP, except for gas-fired boilers. Gas fired boilers are defined as any boiler that burns gaseous fuel not combined with any solid fuels, liquid fuel only during periods of gas curtailment, gas supply emergencies, or periodic testing on liquid fuel. The boilers and heaters at this facility meet the definition of gas fired boilers and are not subject to this subpart. Process heaters such as the Ammonia Reformers are not regulated by Subpart JJJJJJ. Therefore, this regulation does not apply to the Enid site.

Subpart VVVVVV, (Chemical Manufacturing Area Sources) affects each chemical manufacturing process unit that uses as feedstocks or generates as products or byproducts any of the listed organic or metal HAPs. The compliance date for Subpart VVVVVV was October 29, 2012. The facility does not produce any organic HAP in Table 1 of Subpart VVVVVV, but does have nickel as a component of catalysts. Therefore, Subpart VVVVVV does apply to the site.

Compliance Assurance Monitoring, 40 CFR Part 64 [Applicable]

Compliance Assurance Monitoring, as published in the Federal Register on October 22, 1997, applies to any pollutant specific emission unit at a major source that is required to obtain a Title V permit, if it meets all the following criteria:

- It is subject to an emission limit or standard for an applicable regulated air pollutant
- It uses a control device to achieve compliance with the applicable emission limit or standard.
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant of 100 TPY.

The sources and pollutants that meet these three conditions are as follows:

- No. 1 Urea Plant Granulators A, B, & C – PM

The Nitric Acid Plant stack is subject to emission limitations in this permit and is equipped with a non-selective catalytic reduction system, which reduces emissions of nitrogen oxides (NO_X). KFE is required by this permit to operate a continuous emissions monitoring system (CEMS) to record emissions of NO_X from the Nitric Acid Plant stack on a continuous basis. In accordance with 40 CFR §64.2(b)(vi), CAM requirements do not apply to units equipped with a permit-required CEMS.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Applicable]

The plant has substances regulated under 40 CFR Part 68 present in quantities greater than the threshold quantities; therefore, 40 CFR Part 68 is applicable. A Risk Management Plan was submitted on June 16, 1999, and determined to be complete by EPA. KFE has prepared the plant's updated RMP and it was submitted by the June 21, 2004 deadline. KFE is in compliance with requirements of this part, including registration and submission of an RMP. More information on this federal program is available on the web page: *www.epa.gov/rmp*.

Stratospheric Ozone Protection, 40 CFR Part 82 [Subpart A and F Applicable]
These standards require phase out of Class I & II substances, reductions of emissions of Class I & II substances to the lowest achievable level in all use sectors, and banning use of nonessential products containing ozone-depleting substances (Subparts A & C); control servicing of motor vehicle air conditioners (Subpart B); require Federal agencies to adopt procurement regulations which meet phase out requirements and which maximize the substitution of safe alternatives to Class I and Class II substances (Subpart D); require warning labels on products made with or containing Class I or II substances (Subpart E); maximize the use of recycling and recovery upon disposal (Subpart F); require producers to identify substitutes for ozone-depleting compounds under the Significant New Alternatives Program (Subpart G); and reduce the emissions of halons (Subpart H).

Subpart A identifies ozone-depleting substances and divides them into two classes. Class I controlled substances are divided into seven groups; the chemicals typically used by the manufacturing industry include carbon tetrachloride (Class I, Group IV) and methyl chloroform (Class I, Group V). A complete phase-out of production of Class I substances is required by January 1, 2000 (January 1, 2002, for methyl chloroform). Class II chemicals, which are hydrochlorofluorocarbons (HCFCs), are generally seen as interim substitutes for Class I CFCs. Class II substances consist of 33 HCFCs. A complete phase-out of Class II substances, scheduled in phases starting by 2002, is required by January 1, 2030.
Subpart F requires that any persons servicing, maintaining, or repairing appliances except for motor vehicle air conditioners; persons disposing of appliances, including motor vehicle air conditioners; refrigerant reclaimers, appliance owners, and manufacturers of appliances and recycling and recovery equipment comply with the standards for recycling and emissions reduction.
The Standard Conditions of the permit address the requirements specified at §82.156 for persons opening appliances for maintenance, service, repair, or disposal; §82.158 for equipment used during the maintenance, service, repair, or disposal of appliances; §82.161 for certification by an approved technician certification program of persons performing maintenance, service, repair, or disposal of appliances; §82.166 for recordkeeping; § 82.158 for leak repair requirements; and §82.166 for refrigerant purchase records for appliances normally containing 50 or more pounds of refrigerant.

SECTION VIII. COMPLIANCE

Tier Classification and Public Review

This application has been determined to be Tier II based on the request for a construction permit for a significant modification to an existing major source. Information on all permit actions is available for review by the public in the Air Quality section of the DEQ Web page: www.deq.ok.gov/.

The applicant published the "Notice of Filing a Tier II Application" in the *Enid News and Eagle*, a daily newspaper circulated in Garfield County, on March 3, 2021. The notice stated that the application was available for public review at the Enid Public Library, 120 West Maine Ave, Enid, OK or at the DEQ Air Quality Office in Oklahoma City. A draft of this permit will also made available for public review for a period of thirty days as stated in another newspaper announcement. The facility is located within 50 miles of the border with the state of Kansas; that

state will be notified of the draft permit. The "proposed" permit will be submitted to EPA for a 45-day review period.

The applicant has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant owns the property.

Fee Paid

Part 70 construction permit fee of $5,000.

SECTION IX. SUMMARY

The facility has demonstrated the ability to comply with the requirements of the several air pollution control rules and regulations. Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance and enforcement issues that would affect the issuance of this permit. Issuance of the construction permit is recommended, contingent on public and EPA review.

DRAFT

PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS

Koch Fertilizer Enid LLC **Permit No. 2016-1295-C (M-8)**
Koch Fertilizer Plant

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality on February 24, 2021. The Evaluation Memorandum dated April 1, 2021, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain limitations or permit requirements. Commencing construction or continuing operations under this permit constitutes acceptance of, and consent to the conditions contained herein.

1. Point of emissions and applicable emissions limitations. [OAC 252:100-8-6(a)(1)]

EUG 1 Plant-wide Emissions Cap

A. The permittee shall limit actual annual emissions of methanol from the plant to 9.9 TPY (calculated on a 12-month rolling total). Actual annual plant-wide methanol emissions shall be calculated each month and the 12-month rolling total shall be determined. Relevant records specified in Specific Condition 5 will be used in the methanol emission calculations, as applicable.

B. The permittee shall tabulate monthly methanol emissions using the methods outlined below or based on equivalent methods as accepted by ODEQ.

1. Emissions from methanol-containing conditioning agent(s) shall be calculated on a mass balance basis from the weight of conditioning agent(s) added to urea times the weight percent of methanol in the conditioning agent(s). The average weight percent of methanol in the conditioning agent(s) shall be based on a 12-month rolling average.
2. Emissions from diverting process condensate from the process condensate stripper to the zero discharge pond or periodic venting from the process condensate stripper stack to the atmosphere, shall be calculated based on the methanol concentrations in the condensate times the volume of condensate diverted to the ponds and/or the methanol concentrations exhausted to the atmosphere.
3. Methanol emissions during plant startup, shutdown, and/or malfunction events from each of the CO_2 strippers (PIC-30 vents) shall be calculated as 0.476 lb methanol per ton CO_2 or based on factors derived for each PIC-30 vent from the most recent ODEQ-approved stack test.

C. Facility-wide process CO_2 emissions shall not exceed 1,260,000 tons per year, 12-month rolling average.
   1. Facility-wide process CO_2e emissions shall not exceed 1,260,000 tons per year, 12month rolling average. Compliance with this limit will be demonstrated using 40 CFR Part 98, Subpart G to calculate the amount of process CO_2 produced plant-wide, then subtracting the amount of CO_2 sold or consumed plant-wide using a mass balance approach. Relevant records specified in Specific Condition 5 will be used in the CO_2 emission calculations, as applicable.
   2. Plant-wide process CO_2 emissions shall not exceed a rate of 1.26 tons CO_2e emitted per ton ammonia produced on 12-month rolling average. Compliance with this limit will be demonstrated using the procedure in paragraph C.1 to calculate plant-wide CO_2e emissions and site production records to calculate the amount of ammonia produced plant-wide.

D. The permittee shall limit combustion CO_2e as follows:
   1. Total combustion CO_2e emissions from the emission unit groups EUG 2, EUG 3 (except this limit does not apply to 2202UB), and EUG 23 (except this limit does not apply to UR2BLR2), shall not exceed 1,318,669 tons per year on a 12-month rolling average. Compliance with this limit will be demonstrated using 40 CFR Part 98, Subpart C to calculate combustion CO_2 from these emission unit groups.
   2. Combustion CO_2 emissions from the emission unit groups: EUG 2, EUG 3 (except this limit does not apply to 2202UB), and EUG 23 (except this limit does not apply to UR2BLR2), shall not exceed 117 lb/MMBTU. Compliance with this limit will be demonstrated using records of fuel consumed.
   3. Compliance Demonstration: Use of pipeline-quality natural gas as the only fuel demonstrates compliance with combustion CO_2e emissions limitations for EUG 2, EUG 3, and EUG 23 (except this limit does not apply to UR2BLR2). Compliance can be shown by the following methods: for pipeline grade natural gas, a current gas company bill. Compliance shall be demonstrated at least once annually.

EUG 2 Ammonia Plant Primary Reformers

Location	EU ID	Heat Input*
Ammonia Plant #1	101B1	965 MMBTUH
Ammonia Plant #2	101B2	990 MMBTUH

*Heat input limitation is for a 12-month rolling averaging period, and includes arch burners, tunnel burners, superheat burners, and auxiliary boiler burners.

Point ID	Emission Unit	PM_{10} / $PM_{2.5}$		SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
2-9095 (No. 1 Reformer)	101B1	8.02	31.49	0.95	3.73	215.20	500.86	5.80	22.79	88.61	348.08
2-9097 (No. 2 Reformer)	101B2	10.06	32.31	1.19	3.83	270.00	173.45	7.28	23.38	111.18	357.10

A. The fuel-burning equipment shall be fueled by pipeline quality natural gas and ammonia and HRU plant purge gas as primary fuels. [OAC 252:100-31-25]

B. Emissions of NOx from the No. 1 and No. 2 Reformers shall not exceed 0.20 lb/MMBTU, 3-hour average. [OAC 252:100-33]

C. The permittee shall operate and maintain continuous emissions monitoring systems (CEMS) for measuring emissions of NOx and CO from each reformer. The CEMS shall be certified and quality-assured using the methods and procedures of 40 CFR Part 60, Appendices B and F.

D. Performance testing shall be conducted while the units are operating within 10% of the rates at which operating permit authorization will be sought.

E. At least 30 days prior to the testing, a notification of the test date and testing protocol shall be submitted to AQD. Deficiencies in the protocol shall be resolved prior to commencement of testing.

F. Combustion CO_2e emissions shall not exceed 117 lb CO_2e / MMBTU heat input (30 day rolling average). [OAC 252:100-8-34(b)]

G. The No. 2 Reformer shall include a selective catalytic reduction system which achieves NOx emissions of 0.04 lb/MMBTU or less. [OAC 252:100-8-5]

H. The following requirements demonstrate compliance with the heat input restrictions for EUG 2. [OAC 252:100-43]

1. The permittee shall measure natural gas and ammonia plant purge gas flow to the primary reformers. Flow instrumentation shall be calibrated semi-annually.
2. The permittee shall calculate the total fuel energy usage in each plant by adding the total natural gas energy for fuel to the purge gas energy usage for fuel for each plant.
3. The permittee shall calculate the average hourly heat input for each plant by dividing the total plant fuel energy usage by the number of hours the plant operated during the month. Monthly calculations shall be used to determine the heat input on a 12-month rolling average.

I. Emissions of NOx and CO from the reformers shall be determined on an hourly basis by multiplying the heat input (MMBTUH) by the emission rates (lb/MMBTU obtained from CEMS data). Compliance with the lb/hr emission limitations for NOx and CO shall be based upon a 3-hour averaging period using the arithmetic average from three contiguous 1-hour periods. Hourly emissions of VOC, SO_2, and PM shall be determined monthly based on multiplying AP-42 factors by the monthly total heat input and dividing by the monthly total hours of operations.

J. 12-month rolling emissions shall be calculated as follows: emissions of NOx and CO from the reformers shall be determined on a monthly basis by totaling the hourly emissions. Emissions of VOC, SO_2, and PM shall be determined monthly based on AP-42 factors and the monthly total heat input rates. Compliance with the annual emission limitations shall be based upon a 12-month rolling total.

EUG 3 Boilers/Heaters > 50 MMBTUH

Location	EU ID	EU Name/Model
No. 1 Urea Plant	403A	No. 1 Urea Boiler A
No. 1 Urea Plant	403B	No. 1 Urea Boiler B
Ammonia Plant #1	2202UB	Ammonia Unit Start-up Boiler

Point ID	Emission Unit	PM_{10}		SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
3-9100	403A	0.94	4.11	0.07	0.32	16.80	73.79	0.45	1.96	10.38	45.45
3-9101	403B	0.94	4.11	0.07	0.32	16.80	73.79	0.45	1.96	10.38	45.45

All emissions limits on a TPY basis are on a 12-month rolling basis.

A. The fuel-burning equipment shall be fired with pipeline grade natural gas. [OAC 252:100-31-25]

B. Emissions of nitrogen oxides from the fuel-burning equipment shall not exceed 0.2 lb/MMBTU, three hour average. [OAC 252:100-33-2(a)]

C. Compliance Demonstration: Use of pipeline-quality natural gas as the only fuel: compliance can be shown by the following methods: for pipeline grade natural gas, a current gas company bill. Compliance shall be demonstrated at least once per calendar year.

D. Operation of the Ammonia Plant #1 Start-up Boiler is authorized until shakedown of the new No. 2 Urea Plant Boiler 2 is completed.

EUG 4 Boilers/Heaters < 50 MMBTUH

Location	EU ID	EU Name/Model
Ammonia Plant #1	102B1	Ammonia Plant No. 1 Unit Startup Heater
Ammonia Plant #2	102B2	Ammonia Plant No. 2 Unit Startup Heater

Point ID	Emission Unit	PM_{10}		SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
4-9102	102B1	0.4	1.6	0.03	0.1	4.9	21.3	0.3	1.2	4.1	17.9
4-9103	102B2	0.4	1.6	0.03	0.1	4.9	21.3	0.3	1.2	4.1	17.9

A. The fuel-burning equipment shall be fired with pipeline grade natural gas. [OAC 252:100-31-25]

B. Compliance Demonstration: Use of pipeline-quality natural gas as the only fuel demonstrates compliance with emissions limitations for EUG 4. Compliance can be

shown by the following methods: for pipeline grade natural gas, a current gas company bill. Compliance shall be demonstrated at least once in every calendar year.

EUG 5 No. 1 Urea Plant Conditioning Agent Storage Tank: The equipment item listed below is considered insignificant.

Location	EU ID	EU Name
No. 1 Urea Plant	D202	Conditioning Agent Tank

A. Methanol emission limitations and compliance demonstration for this source are addressed in Item A for EUG 1.

EUG 6 No. 1 Urea Plant Granulators

Point ID	Emission Unit	PM_{10}	
		lb/hr	TPY
6-9104	No. 1 Urea Granulator A	6.60	28.92
6-9105	No. 1 Urea Granulator B	6.60	28.92
6-9106	No. 1 Urea Granulator C	6.60	28.92

A. Compliance Demonstration: Visible emissions observations shall be performed at least monthly during normal plant operations by conducting a plant walkthrough for sources categorized under EUG 6. A record shall be maintained indicating if any opacity or visible emissions (excluding steam, fog, or icy mist from the presence of uncombined water) were observed during the monthly observations. If visible emissions are detected during normal operations, corrective action shall be taken as soon as possible and/or a six-minute opacity reading in accordance with EPA Reference Method #9 (RM 9) or a visible emissions observation using a certified opacity camera in accordance with approved opacity measurement methodology will be conducted within three (3) working days. [OAC 252:100-25-3(b)]

B. All discharges from each urea granulation operation shall be processed by a high-efficiency spray tower wet scrubber or equivalent device for PM emissions control. [OAC 252:100-8-34(b)(1)]

C. Each scrubber shall be operated with a pressure differential of at least 7 inches WC when processing discharges from each urea plant granulator stack. The pressure differential from each scrubber shall be monitored and recorded at least once daily when operating. If the pressure differential is found to be less than 7 inches WC, corrective action shall be taken within four (4) hours and another reading taken. If two (2) consecutive readings are found to be out of range, a possible deviation may have occurred and the permittee shall include such event in the Title V Semi-Annual Monitoring and Deviation Report. [OAC 252:100-43]

D. The permittee is subject to following requirements under 40 CFR Part 60, Subpart VVa for the urea plant, as applicable:

i. § 60.486a: Recordkeeping requirements
ii. § 60.487a. Reporting requirements

E. The permittee shall comply with the Compliance Assurance Monitoring (CAM) specifications, including but not limited to:

i. §64.1 Definitions.
ii. §64.2 Applicability.
iii. §64.3 Monitoring design criteria.
iv. §64.4 Submittal requirements.
v. §64.5 Deadlines for submittals.
vi. §64.6 Approval of monitoring.
vii. §64.7 Operation of approved monitoring.
viii. §64.8 Quality improvement plan (QIP) requirements.
ix. §64.9 Reporting and recordkeeping requirements.
x. §64.10 Savings provisions.

F. Compliance Assurance Monitoring Requirements and Specifications

Parameter	**Indicator**
Indicator	Scrubber pressure differential
Measurement Approach	Differential pressure transducer
Indicator Range	An excursion is defined as a 24-hour average pressure differential below 7 inches water column. Excursions trigger an inspection, corrective actions, and a reporting requirement.
Data Representativeness Performance Criteria	The differential pressure transducer monitors the static pressures upstream and downstream of the wet scrubber.
QA/QC Practices and Criteria	Annual comparison to U-tube manometer or digital pressure gauge. Acceptability criterion is 0.5 inches WC.
Monitoring Frequency	Measured continuously
Data Collection Procedure	Values are recorded at least once every 8 hours. Values are recorded more frequently when they fall outside of the compression deviation of the data management system.
Averaging Period	Daily

EUG 7 No. 1 Urea Plant Synthesis Vents

Point ID	**Emission Unit**	**CO**		**PM_{10}**	
		lb/hr	**TPY**	**lb/hr**	**TPY**
7-9111	No. 1 Urea Plant High Pressure Vent	3.86	16.40	1.87	7.92
7-9110	No. 1 Urea Plant Low Pressure Vent				

A. Compliance Demonstration: Compliance with these limits is demonstrated by Urea production of 1,550 TPD (monthly average) or less.

EUG 9 No. 2 Ammonia Plant Cooling Tower

Point ID	Emission Unit	PM_{10}		$PM_{2.5}$	
		lb/hr	TPY	lb/hr	TPY
9-9159	No. 2 Ammonia Plant Cooling Tower	0.05	0.22	0.0002	0.001

A. Compliance Demonstrations: the following records shall be kept for the No. 2 Ammonia Plant Cooling Tower: [OAC 252:100-43]

i. Records of vendor certification of maximum circulation rate
ii. Records of design and construction showing 0.0005% or better drift, on the added cell.

EUG 10 CO_2 Stripping Towers:

Point ID	Emission Unit	CO	
		lb/hr	TPY
10-9120	CO_2 Stripping Tower 1 (PIC30-1)	5.8	25.4
10-9121	CO_2 Stripping Tower 2 (PIC30-2)	5.8	25.4

All emissions limits on a TPY basis are on a 12-month rolling basis.

A. The permittee shall maintain logs of the duration (hours) of venting to the atmosphere.
B. Excess emissions resulting from unanticipated events, such as malfunctions, shall be reported consistent with 252:100-5 and 252:100-9.

EUG 11 Nitric Acid Plant:

Point ID	Emission Unit	NO_X		
		ppm*	lb/hr*	TPY
11-9115	Nitric Acid Plant – Normal Operation	79	5.0	21.9
	Nitric Acid Plant – Start-up and Shutdown	750	47.5	3.6

* based upon a 3-hour averaging period using the arithmetic average from three contiguous 1-hour periods. All emissions limits on a TPY basis are on a 12-month rolling basis.

A. Air emissions from the nitric acid plant shall be processed by an abatement system that reduces NO_X emissions to 79 ppmdv or less, based on a 3-hour averaging period using the arithmetic average from three contiguous one-hour periods. The permittee shall maintain compliance with the NO_X limits at all times, except as specified in Condition F below.

B. The permittee shall operate and maintain a continuous emission monitoring system (CEMS) for measuring nitrogen oxides. Except for periods of system breakdowns, repairs, calibration checks, and zero and span adjustments not to exceed a total of 2.5% of the operating hours in a calendar quarter, the CEMS shall be in continuous operation. [OAC 252:100-43]

C. A record shall be maintained of emissions resulting from start-up, shutdown, and malfunction events and the duration of each occurrence. Emissions resulting from start-up, shutdown and malfunction events shall be quantified for this source and reported in the facility's annual emissions inventory.

D. When monitoring shows concentrations in excess of the ppm limit for either normal operations (79 ppm) or for start-ups and shutdowns (750 ppm), the owner or operator shall comply with reporting provisions of OAC 252:100-9-3 for excess emissions. Requirements for periods of other excess emissions (during normal operations) include prompt notification to Air Quality and prompt commencement of repairs to correct the condition of excess emissions. [OAC 252:100-9]

E. Compliance Demonstration: the permittee shall maintain a continuous emission monitoring system (CEMS) for measuring nitrogen oxides. Compliance with the ppm limit will be determined on the basis of a 3-hour averaging period using the arithmetic average from three contiguous one-hour periods. NOx mass emissions shall be calculated by multiplying the NOx ppm by the nitric acid production (on a 100% basis and using an emission factor of 0.0181 lb/ton/ppm NOx or based on factors derived from the most recent ODEQ-approved stack test. Compliance with NOx emission rates on a lb/hr basis shall be determined using the hourly average NOx ppm and hourly nitric acid production from three contiguous 1-hour periods. Compliance with the NOx emission rates on an annual basis using monthly nitric acid production on a 12-month rolling period. Except for periods of malfunction, repairs, calibration checks, and zero and span adjustments, the CEM shall be in continuous operation. [OAC 252:100-43]

F. During periods of start-up and shutdown of the nitric acid plant, NOx emissions (3-hour average using the arithmetic average from three contiguous 1-hour periods) shall not exceed 750 ppm. A shutdown event is defined as the cessation of nitric acid plant operations for any reason and begins at the time when ammonia feed stops and ends three hours later. After the third hour following the cessation of ammonia feed, NOx emissions are no longer included in the 3-hour rolling average calculation since the plant has ceased producing nitric acid. A start-up event is defined as the process of initiating nitric acid production operations and begins 1 hour prior to the initiation of ammonia feed and ends no more than 5 hours after initiating ammonia feed. The maximum number of start-up or shutdown events shall not exceed 50 events per calendar year.

EUG 12 Ammonium Nitrate (AN) Plant:

Point ID	Emission Unit	PM_{10}		CO	
		lb/hr	TPY	lb/hr	TPY
12-9116	AN Plant	2.6	11.0	0.1	0.5

A. Compliance Demonstration: Visible observations shall be performed at least monthly during normal plant operations by conducting a plant walkthrough for sources categorized under EUG 12. A record shall be maintained indicating if any opacity or visible emissions (excluding steam, fog, or icy mist from the presence of uncombined water) were observed during the monthly observations. If visible emissions are

detected during normal operations, corrective action shall be taken as soon as possible and/or a six-minute opacity reading in accordance with EPA Reference Method #9 (RM 9) or a visible emissions observation using a certified opacity camera in accordance with approved opacity measurement methodology will be conducted within three (3) working days. [OAC 252:100-25-3(b)]

EUG 13 Flares

Location	EU ID	EU Name
Ammonia Plant	222OU	Flare 1
Ammonia CS Tanks	2121U	Flare 2

EU ID	NO_X TPY
222OU	15.8
2121U	5.80

A. Compliance with the NO_X emission limitations from the flares is based on a 12-month rolling total.

B. The flares shall be fueled with pipeline quality natural gas and/or ammonia plant purge gas as fuel to maintain the pilot, maintain pressure to the flare during idling, and as enrichment fuel if needed. The flares are authorized to flare ammonia and process off-gases.

C. The flare systems shall be operated with the following equipment to monitor for the presence of combustion:

1. Thermocouple or any other equivalent device to detect the presence of a flame.
2. Steam heated vaporizer for vaporization of any liquids from railcar depressurizing or other sources as needed.

D. Compliance Demonstration: Compliance with the NO_X emission limit will be demonstrated based on maintaining throughput records for material (fuel and flared streams) sent to the flares and estimating NO_X emissions (12-month rolling total). Compliance with the equipment standards set forth in Permit Condition C for EUG 13 will be demonstrated through annual verification with plant personnel that the equipment exists as stated.

EUG 14 Fugitives

EU ID	Point ID	EU Name
UMS	14-9122	No. 1 Urea Plant Material Storage
UMH	14-9121	No. 1 Urea Plant Material Handling
UML	14-9120	No. 1 Urea Plant Railcar Loading

A. Except for truck and railcar loading, material handling drop operations shall take place within completely-enclosed buildings, etc. The conveyor leading from the No. 1 Urea

storage warehouse to the No. 1. Urea storage dome shall be at least partially-enclosed. Railcar and truck loading may take place in partially-enclosed operations which provide some shelter from winds. [OAC 252:100-29]

EUG 15 Start-up/Shutdown Vents: The methanol limit and compliance demonstration are addressed in EUG 1, (plant-wide emission cap)

Point ID	Emission Unit	CO	
		lb/hr	TPY
15-9151 15-9152 15-9153	Ammonia Plant No. 1 SU/SD Vents	10,962.8	345.3
15-9154 15-9155 15-9156	Ammonia Plant No. 2 SU/SD Vents	10,962.8	345.3
15-9109	Ammonia Plant #2 Process Condensate Stripper	--	--

All emissions limits on a TPY basis shall be calculated on a 12-month rolling basis.

A. The permittee shall maintain records of the duration (hours) and amount of venting to the atmosphere (12-month rolling total).

B. Compliance Demonstration: records specified in Item A for EUG 15 shall demonstrate compliance.

C. Excess emissions resulting from unanticipated events, such as malfunctions, shall be reported consistent with 252:100-5 and 252:100-9.

EUG 16 No. 1 Urea Plant Cooling Tower

EU ID	Point ID	EU Name
22014D	22014D	No. 1 Urea Plant Cooling Tower No. 2

A. The No. 1. Urea Plant Cooling Tower No. 2 shall be constructed with drift eliminators that achieve a drift efficiency of 0.002 percent or better.

EUG 17 Insignificant Activities

The equipment items listed below are considered insignificant. Although emission limits are not specified, the facility will keep records demonstrating the continued insignificance of these items. Other insignificant emission sources may exist at the facility for which recordkeeping is not required. Recordkeeping shall be maintained for insignificant activities as required by Specific Condition No. 6.

Unit ID	Description
R-2401	Glycol dehydration reboiler (1.5 MMBTUH)
APP-IC	475-hp Portable mixer engine *
APP-Portable Unit	APP Portable 10-34-0 processing unit*
Diesel	Diesel storage tanks (4)
UAN TANKS	UAN tanks (3)
LIME	Lime silos (2)
#1 Plant TV-50Vent	No. 1 Ammonia Plant TV-50 vent
#1 PIC-14 Vent (PV-179)	No. 1 Ammonia Plant PIC-14 fuel vent (PV-179)
#1 PIC-33 Vent (PV-30C)	No. 1 Ammonia Plant PIC-33 fuel vent (PV-30C)
#1 Catalyst Warm-ups	No. 1 Ammonia Plant catalyst warm-up vent (SP-73)
#1 Low Shift Vent	No. 1 Ammonia Plant Low-Shift Reductions vent (SP-73)
#1 LTS Catalyst Cooling	No. 1 Ammonia Plant LTS Catalyst Cooling vent (SP-73)
#1 HTS Catalyst Cooling	No. 1 Ammonia Plant HTS Catalyst Cooling vent (SP-73)
#1 Methanator Catalyst Cooling	No. 1 Ammonia Plant Methanator Catalyst Cooling vent (SP-73)
#2 Plant TV-50Vent	No. 2 Ammonia Plant TV-50 vent
#2 PIC-14 Vent (PV-179)	No. 2 Ammonia Plant PIC-14 fuel vent (PV-179)
#2 PIC-33 Vent (PV-30C)	No. 2 Ammonia Plant PIC-33 fuel vent (PV-30C)
#2 Catalyst Warm-ups	No. 2 Ammonia Plant catalyst warm-up vent (SP-73)
#2 Low Shift Vent	No. 2 Ammonia Plant Low-Shift Reductions vent (SP-73)
#2 LTS Catalyst Cooling	No. 2 Ammonia Plant LTS Catalyst Cooling vent (SP-73)
#2 HTS Catalyst Cooling	No. 2 Ammonia Plant HTS Catalyst Cooling vent (SP-73)
#2 Methanator Catalyst Cooling	No. 2 Ammonia Plant Methanator Catalyst Cooling vent (SP-73)
Lab Vents	Laboratory fume hoods and vents
UR2FBATK	No. 2 Urea Plant Conditioning Agent storage tank
UR-TK-2405	Super U Slurry storage tank
UR-TK-2415	Super U Slurry storage tank
LS-TK-4	DEF Grade Urea Solution storage tank
LS-TK-11	DEF Grade Urea Solution storage tank
LS-TK-15	DEF Grade Urea Solution storage tank
22014A	No. 1 Ammonia Plant Cooling Tower
22014B	No. 2 Ammonia Plant Cooling Tower (old cells)
22014C	UAN Plant Cooling Tower
22014D	No. 1 Urea Plant Cooling Tower (old cells)
Diesel Tank	12,000-gallon Diesel Tank
UR1 Roads	No. 1 Urea Plant Haul Roads
---	DEF Truck and Rail Loading

* Equipment owned, operated, and maintained by a contractor.

A. Compliance Demonstration: Relevant records specified in Specific Condition 6 will be used annually, as applicable, to demonstrate continued insignificant status. Compliance with the equipment standards set forth will be demonstrated through annual verification with plant personnel annually that the equipment exists as stated.

EUG 18 Emergency Engines Subject to NSPS Subpart JJJJ

Point ID#	Capacity (hp)	Make/Model	Installed Date
GEN2	147	On-Site Energy / Generac 6.8GN	2010
GEN3	40	Power Solutions / Olympian G25LTA	2011
GEN4	49	Generac 1.5 RG025	2018

Point ID	Emission Unit	PM_{10} / $PM_{2.5}$		SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
GEN2	Emergency Control Room Generator	0.02	0.01	0.01	0.01	0.65	0.16	0.32	0.08	1.30	0.32
GEN3	Safety Shower Generator	0.01	0.01	0.01	0.01	0.88	0.04	0.01	0.01	34.13	8.53
GEN4	Security House Generator	0.09	0.02	0.01	0.01	1.08	0.27	0.21	0.05	14.35	3.58

A. The emergency generator engines listed above are subject to 40 CFR Part 60, Subpart JJJJ, and shall comply with all applicable standards for owners or operators of stationary spark ignition internal combustion engines:

1. § 60.4230: Am I subject to this subpart?
2. § 60.4231: What emission standards must I meet if I am a manufacturer of stationary SI internal combustion engines?
3. § 60.4232: How long must my engines meet the emissions standards if I am a manufacturer of stationary SI internal combustion engines?
4. § 60.4233: What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?
5. § 60.4234: How long must I meet the emissions standards if I am an owner or operator of a stationary SI internal combustion engine?
6. § 60.4235: What fuel requirements must I meet if I am an owner or operator of a stationary SI internal combustion engine?
7. § 60.4236: What is the deadline for importing or installing stationary SI ICE produced in the previous model year?
8. § 60.4237: What are the monitoring requirements if I am an owner or operator of a stationary SI internal combustion engine?
9. § 60.4238: What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines < 19 KW (25 HP).
10. § 60.4239: What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines > 19 KW (25 HP) that use gasoline?
11. § 60.4240: What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines > 19 KW (25 HP) that use LPG?
12. § 60.4241: What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines participating in the voluntary certification program?

13. § 60.4242: What other requirement must I meet if I am a manufacturer of stationary SI internal combustion engines?
14. § 60.4243: What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?
15. § 60.4244: What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?
16. § 60.4245: What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?
17. § 60.4246: What parts of the General Provisions apply to me?
18. § 60.4247: What parts of the mobile source provisions apply to me if I am a manufacturer of stationary SI internal combustion engines?
19. § 60.4248: What definitions apply to this subpart?

B. Engines shall have a permanent identification plate attached that shows the make, model, and serial number. [OAC 252:100-43]

EUG 19 A2 Emergency Generator Diesel Engine Subject to NESHAP Subpart ZZZZ

Point ID#	Capacity (hp)	Make/Model	Serial Number	Installed Date
GEN	460	Cummins KT-1150-G	100P1432	1976

A. The owner/operator shall comply with all applicable requirements of the NESHAP: Reciprocating Internal Combustion Engines, Subpart ZZZZ, for each affected facility including but not limited to: [40 CFR §§ 63.6580 through 63.6675]

1. § 63.6580 What is the purpose of subpart ZZZZ?
2. § 63.6585 Am I subject to this subpart?
3. § 63.6590 What parts of my plant does this subpart cover?
4. § 63.6595 When do I have to comply with this subpart?
5. § 63.6603 What emission limitations and operating limitations must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?
6. § 63.6605 What are my general requirements for complying with this subpart?
7. § 63.6625 What are my monitoring, installation, operation, and maintenance requirements?
8. § 63.6630 How do I demonstrate initial compliance with the emission limitations and operating limitations?
9. § 63.6640 How do I demonstrate continuous compliance with the emission limitations and operating limitations?
10. § 63.6650 What reports must I submit and when?
11. § 63.6655 What records must I keep?
12. § 63.6660 In what form and how long must I keep my records?
13. § 63.6665 What parts of the General Provisions apply to me?
14. § 63.6670 Who implements and enforces this subpart?
15. § 63.6675 What definitions apply to this subpart?

EUG 19A Emergency Firewater Pumps Subject to NSPS Subpart IIII

Point ID#	Capacity (hp)	Make/Model	Serial Number	Installed Date
PUMP	150	Cummins CFP5E-F50	73936914	2015
PUMP2	305	John Deere JU6H-UFADX8	15-072741-02-011QX3758	2016

A. The permittee shall comply with all applicable requirements of 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and shall comply with all applicable requirements including but not limited to the following:

1. § 60.4200 Am I subject to this subpart?
2. § 60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?
3. § 60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?
4. § 60.4203 How long must my engines meet the emission standards if I am a stationary CI internal combustion engine manufacturer?
5. § 60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?
6. § 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?
7. § 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?
8. § 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?
9. § 60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?
10. § 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?
11. § 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?
12. §60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?
13. § 60.4217 What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?
14. § 60.4218 What parts of the General Provisions apply to me?
15. § 60.4219 What definitions apply to this subpart?

EUG 20 Gasoline Tank

Unit ID	Point	EU Description	Capacity	Construction Date
Gasoline	Gasoline	Vehicle gasoline tank	1,128 gal	Pre-2003

A. The gasoline storage tank shall be equipped and operated with a permanent submerged fill pipe. [OAC 252:100-37-15(b)]

B. The owner/operator shall comply with all applicable requirements of the NESHAP Subpart CCCCCC, for each affected facility including but not limited to:
[40 CFR §§ 63.11110 through 63.11132]

1. Minimize gasoline spills;
2. Clean up spills as expeditiously as practicable;
3. Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use;
4. Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.

EUG 21 No. 2 Urea Plant Synthesis Vent

Point ID	Emission Unit	PM_{10} / $PM_{2.5}$		SO_2		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
21-9163	No. 2 Urea Plant Vent	0.05	0.20	--	--	3.08	12.83

A. Compliance Demonstration: Compliance with these limits is demonstrated by Urea production of 3,600 TPD (monthly average) or less.

B. The following USEPA Test Methods shall be used for testing of emissions, unless otherwise approved by Air Quality:
Method 1: Sample and Velocity Traverses for Stationary Sources.
Method 2: Determination of Stack Gas Velocity and Volumetric Flow Rate.
Method 3: Gas Analysis for Carbon Dioxide, Excess Air, and Dry Molecular Weight.
Method 4: Moisture in Stack Gases.
Method 5: PM emissions from Stationary Sources
Method 202: Condensable PM Emissions from Stationary Sources

C. A copy of the test plan shall be provided to Air Quality Division at least 30 days prior to each test date. [OAC 252:100-43][

D. Performance testing shall be conducted while the units are operating within 10% of the rates at which operating permit authorization is sought. [OAC 252:100-43]

E. At least 30 days prior to the testing, a notification of the test date and testing protocol shall be submitted to AQD. Deficiencies in the protocol shall be resolved prior to commencement of testing. [OAC 252:100-43]

EUG 22 No. 2 Urea Plant Granulator

Point ID	Emission Unit	PM_{10} / $PM_{2.5}$		VOC	
		lb/hr	TPY	lb/hr	TPY
22-9164	No. 2 Urea Plant Granulator	6.04	26.45	11.40	18.95

A. All discharges from each urea granulation operation shall be processed by a high-efficiency spray tower wet scrubber or equivalent device for PM emissions control. PM emissions shall not exceed 0.1 lb per ton product. [OAC 252-8-34(b)(1)]

B. By September 9, 2018, the permittee shall specify control device operating parameters which achieve the stated limitations and submit appropriate permitting documentation, as required. [OAC 252:100-43]

C. The permittee is subject to the following requirements under 40 CFR Part 60, Subpart VVa for the urea plant, as applicable:

a. § 60.486a: Recordkeeping requirements
b. § 60.487a: Reporting requirements

EUG 23 No. 2 Urea Plant Boilers

Point ID	Emission Unit	PM_{10} / $PM_{2.5}$		SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
23-9165	No. 2 Urea Plant Boiler	3.35	14.69	0.26	1.16	20.25	88.70	2.43	10.63	16.65	72.93
23-9171	No. 2 Urea Plant Boiler 2	0.76	3.33	0.55	2.41	4.50	19.71	0.55	2.41	3.70	16.21

A. The above fuel burning equipment shall be fueled by pipeline quality natural gas. [OAC 252:100-31-25]

B. Boiler 23-9165 is subject to federal New Source Performance Standards, 40 CFR Part 60, Subpart Db, and shall comply with all applicable requirements, including, but not necessarily limited to those conditions shown following. (NOTE: Permit limitations are more stringent than Db limitations and will result in compliance with Subpart Db.) [40 CFR §§ 60.40b through 60.49b]

1. The boilers shall not discharge into the atmosphere any gases that contain nitrogen oxides (expressed as nitrogen dioxide) in excess of 0.20 lbs/MMBTU, 30-day rolling average. [40 CFR §§ 60.44b(a)(1)(ii)]
2. § 60.46b Performance test and compliance provisions;
3. § 60.48b Emission Monitoring, and
4. § 60.49b Reporting and recordkeeping requirements.

C. Boiler 23-9171 is subject to federal New Source Performance Standards, 40 CFR Part 60, Subpart Dc, and shall comply with all applicable requirements, including, but not

necessarily limited to those conditions shown following. The permittee shall keep records of fuels burned in this unit. [40 CFR §§ 60.40c through 60.48c]

D. Sulfur oxide emissions (measured as sulfur dioxide) from any new gas-fired fuel-burning equipment shall not exceed 0.2 lbs/MMBTU-heat input (86 ng/J), three hour average. [OAC 252:100-31-25(a)(1)]

E. For Boiler 23-9165, combustion CO_2e emissions shall not exceed 117 lb CO_2e / MMBTU heat input (30 day rolling average). [OAC 252:100-8-34(b)]

F. Within 60 days of achieving maximum production rate of Boiler 2, not to exceed 180 days from initial start-up, performance testing shall be conducted and a written report of results submitted to AQD. The following USEPA methods shall be used for testing of emissions, unless otherwise approved by Air Quality: [OAC 252:100-43]

Method 1: Sample and Velocity Traverses for Stationary Sources.
Method 2: Determination of Stack Gas Velocity and Volumetric Flow Rate.
Method 3: Gas Analysis for Carbon Dioxide, Excess Air, and Dry Molecular Weight.
Method 4: Moisture in Stack Gases.
Method 7E: NOx Emissions from Stationary Sources
Method 10: Carbon Monoxide Emissions from Stationary Sources
Method 25A: VOC Emissions from Stationary Sources
Method 201 and 202: PM Emissions from Stationary Sources

G. A copy of the test plan shall be provided to AQD at least 30 days prior to each test date. [OAC 252:100-43]

H. Performance testing shall be conducted while the boiler is operating within 10% of the rates at which operating permit authorization will be sought. [OAC 252:100-43]

I. At least 30 days prior to the testing, a notification of the test date and testing protocol shall be submitted to AQD. Deficiencies in the protocol shall be resolved prior to commencement of testing. [OAC 252:100-43]

EUG 25 No. 2 Urea Plant Cooling Tower: The equipment item listed below is considered insignificant.

EU ID	Point ID	EU Name/Model	Capacity
UR2CTWR	25-9167	No. 2 Urea Plant Cooling Tower	80,000 GPM

EUG 26 No. 2 Urea Plant Fugitive PM

EUID	Point ID	EU Name
UR2MLD	26-9170	No. 2 Urea Materials Loading
UR2MSTG	26-9168	No. 2 Urea Materials Storage
UR2MTRFR	26-9169	No. 2 Urea Materials Transfer

A. All conveyors between granulation, storage, and loading shall be equipped with wind shields. [OAC 252:100-8-6(a)]

B. Loading of product into trucks and railcars shall be conducted inside enclosures on at least two sides using telescopic chutes into the receiving vessels. [OAC 252:100-8-6(a)]

C. Storage of urea product shall be done in an enclosed building or other vessel shielded from winds. [OAC 252:100-8-6(a)]

EUG 27 New Haul Roads

EUID	Point ID	EU Name
HAULRD	HAULRD	No. 2 Urea Plant Vehicle Traffic

A. Haul roads in the No. 2 Urea Plant loading area shall be paved. [OAC 252:100-29]

B. The roads shall be watered and swept daily, as necessary, to control fugitive dust, except when the following conditions occur: [OAC 252:100-29]
   i. Sweeping and watering need not occur on any day that the haul road is not in use.
   ii. Sweeping and watering need not occur when a rain gauge located at the facility indicates that at least 0.2 inches of precipitation (water equivalent) has occurred within the preceding 24-hour time period.
   iii. Sweeping and watering will not be required when the any daily temperature (as measured at the facility or the Enid Airport during the calendar day) is below 35^{o}F at the point of measurement or road conditions due to weather could create hazardous driving conditions (i.e. completely covered with snow and/or ice).
   iv. If the facility has applied salt or sand for worker or driver safety the facility is not required to sweep or wash until the road has returned to driving conditions that no longer required the use of salt or sand.

C. The permittee shall maintain daily records of road watering and sweeping activities.

D. The permittee may use a wet street sweeper to meet the requirements of this condition.

2. The permittee is authorized to operate the facility continuously (24 hours per day, every day of the year). [OAC 252:100-8-6(a)]

3. The facility is subject to 40 CFR Part 61, Subpart FF, and shall comply with the following standards: [40 CFR § 61.340]

A. § 61.342: Standards, General
B. § 61.355: Test Methods, Procedures, and Compliance Provisions
C. § 61.356: Recordkeeping Requirements
D. § 61.357: Reporting Requirements

4. The owner/operator shall comply with all applicable requirements of the NESHAP: Chemical Manufacturing Process Sources, Subpart VVVVVV, for each affected facility including but not limited to: [40 CFR §§ 63.11494 through 63.11501]

A. § 63.11494 What are the applicability requirements and compliance dates?
B. § 63.11495 What are the management practices and other requirements?
C. § 63.11496 What are the standards and compliance requirements for process vents?
D. § 63.11497 What are the standards and compliance requirements for storage tanks?
E. § 63.11498 What are the standards and compliance requirements for wastewater systems?
F. § 63.11499 What are the standards and compliance requirements for heat exchange systems?
G. § 63.11500 What compliance options do I have if part of my plant is subject to both this standard and another Federal standard?
H. § 63.11501 What are the notification, recordkeeping, and reporting requirements?
I. § 63.11502 What definitions apply to this subpart?
J. § 63.11503 Who implements and enforces this subpart?

5. The following records shall be maintained on location for inspection by ODEQ regulatory personnel. The required records shall be retained either in printed hard-copy or electronically for a period of at least five (5) years following the dates of recording. [OAC 252:100-43]

A. Analysis of plant purge gas used as fuel (monthly) that is comprised of ammonia and HRU plant gas streams, as required by Specific Condition (SC) 1, EUG 2.
B. Plant-wide 12-month rolling total methanol emissions calculations (monthly) as required by SC 1, EUG 1.
C. Records of conditioning agent added to urea (monthly) as required by SC 1, EUG 1.
D. Records of conditioning agent methanol content from vendor, with actual annual methanol content calculated on a 12-month rolling average basis for the No. 1 Urea Plant Granulators of EUG 6 as required by SC 1, EUG 1.
E. Granular urea production rates for the No. 1 Urea Plant Granulators of EUG 6 (monthly).
F. Granular urea truck and railcar loading rates.
G. Monitoring of NO_x concentrations in exhausts from the EUG 11 Nitric Acid plant (continuous when operated) as required by SC 1, EUG 11.
H. Nitric acid production rates, expressed as 100% nitric acid.
I. UAN production rates, expressed as 32% nitrogen.
J. Estimated quantities of ammonia, process off-gas, sent to the EUG 13 flares (monthly) as required by SC 1, EUG 13.
K. Venting episodes from EUG 15, including methods, assumptions, and duration of each event as used in calculating emission rates during venting episodes as required by SC 1, EUG 15.

L. Visible observations records where required for EUG 6 and EUG 12 (monthly) as required by SC 1, EUG 6 and EUG 12.
M. Reference Method 9 or certified opacity camera results as set forth in EUG 6 and EUG 12 (as needed, if applicable) as required by SC 1, EUG 6 and EUG 12.
N. CO_2 production rates (monthly).
O. Hours of operation of the ammonia unit startup boiler in EUG 3 (monthly and 12-month rolling totals) as required by SC 1, EUG 3.
P. Records as required by 40 CFR Part 61, Subpart FF as required by SC 3.
Q. Records as required by 40 CFR Part 60, Subpart VVa for No. 1 and No. 2 Urea Plants (EUG 6 & EUG 22) as required by SC1, EUG 6, D and SC 1, EUG 22, C.
R. Pressure differentials of each urea granulator wet scrubber (daily when operated), No. 1 Urea granulators (EUG 6) as required by SC 1, EUG 6.
S. For the fuel(s) burned, the appropriate document(s) as required by SC 1, EUGs 2, 3, 4, and 13.
T. Records as required by NSPS Subparts IIII and JJJJ and NESHAP Subpart ZZZZ for the emergency engines in EUGs 18, 19, and 19A (including hours of operation) as required by SC 1, EUGs 18, 19, and 19A.
U. Records of average hourly heat input for each reformer, monthly, as required by SC 1, EUG-2.
V. Records as required by 40 CFR Part 63, Subpart CCCCCC as required by SC 1, EUG 20.
W. Numbers and durations of each start-up and shutdown event for EUG 11, the Nitric Acid Plant. As required by SC 1, EUG 11.
X. Records as required by 40 CFR Part 63, Subpart VVVVVV, as required by SC 4.
Y. Monitoring of CO and NO_x concentrations in exhausts from the Primary Reformers (continuous when operated) as required by SC 1, EUG 2.
Z. Records as required by CAM, 40 CFR Part 64.
AA. Records of Primary Reformer 12-month rolling emissions.
BB. Records of TDS testing in the No. 2 Ammonia Cooling Tower (EUG 9).
CC. Ammonia production records for EUG-1 (monthly).
DD. Process CO_2e calculations using 40 CFR Part 98, Subpart G, for EUG-1 (monthly).
EE. CO_2 sales and usage records for EUG-1 (monthly).
FF. Records as required by NSPS Subpart Db and Dc for EUG 23, the No. 2 Urea Boilers.
GG. Temperature measurements or records for any days when haul roads are not watered per EUG 27.

6. The following records shall be maintained on-site to verify Insignificant Activities. No recordkeeping is required for those operations that qualify as Trivial Activities.

[OAC 252:100-8-6 (a)(3)(B)]

A. Hours of operation and the production rates of the portable fertilizer mixing unit and engine.
B. Fuel dispensing to facility owned vehicles: annual throughput of diesel.
C. Lime silos: inspection and maintenance of the dust collector.
D. Diesel storage tanks: records of tank capacities and tank contents.
E. UAN storage tanks: records of tank capacities and tank contents.

F. For other activities that have the potential emissions less than 5 TPY (actual): type of activity and the amount of emissions from the activity.

7. No later than 30 days after each calendar year annual and semi-annual period, the permittee shall submit to Air Quality Division of DEQ, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of the Title V operating permit.

[OAC 252:100-8-6 (c)(5)(A) & (D)]

8. Deviations from the 40 CFR Part 68 regulations that arise from review of process safety management procedures and programs, including deviations identified in the process safety management audits, will not be considered deviations of this permit.

9. The Permit Shield (Standard Conditions, Section VI) is extended to the following requirements that have been determined to be inapplicable to this facility or the listed emission unit groups.

[OAC 252:100-8-6(d)(2)]

A. Facility Wide

Citation	Description	Reason for Non-Applicability
OAC 252:100-7	Minor Sources	not in source category
OAC 252:100-11	Alternative Reduction Plans and Authorizations	not in source category
OAC 252:100-15	Mobile Sources	not in source category
OAC 252:100-17	Incinerators	not type of emission unit
OAC 252:100-23	Cotton Gins	not type of emission unit
OAC 252:100-24	Grain Elevators	not in source category
OAC 252:100-31, Part 2	Sulfur Compounds, Ambient Concentrations	not in source category
OAC 252:100-35	Carbon Monoxide	not in source category
OAC 252:100-39	Nonattainment Areas	not in area category
OAC 252:100-47	Landfills	not in source category
40 CFR Part 60 Subpart D	Steam Generators	below the specified size
40 CFR Part 60 Subpart G	Nitric Acid Plants	prior to the effective date
40 CFR Part 60 Subpart Ga	Nitric Acid Plants	prior to the effective date
40 CFR Part 60 Subpart Kb	Volatile Organic Liquid Storage	vapor pressure of stored material below applicability threshold
40 CFR Part 61, all subparts except M and FF	NESHAP	not in source category, not a major source of HAPs
40 CFR Part 63, all subparts related to Title III major sources	NESHAP	not a major source of HAPs
40 CFR Part 63, Subpart JJJJJJ	Area Source Boiler GACT	not applicable

B. By Emission Unit Grouping

EUG	Citation	Description	Reason for Non-Applicability
EUG 2	40 CFR Part 60, Subpart D	Steam Generating Units > 250 MMBTUH	below the specified size
EUG 2,3	40 CFR Part 60, Subpart Db	Steam Generating Units 100-250 MMBTUH	prior to the effective date

EUG	Citation	Description	Reason for Non-Applicability
EUG 3	40 CFR Part 60, Subpart Dc	Steam Generating Units 10-100 MMBTUH	prior to the effective date
EUG 11	40 CFR Part 60, Subpart G and Ga	Nitric Acid Plants	prior to the effective date
EUG 13	40 CFR Part 60, Subpart A, 60.18	Flare	Not in source category
EUG 5, 17	40 CFR Part 60, Subpart Kb	Storage Vessels	vapor pressure of stored material below applicability threshold
EUG 2	OAC 252:100-31-25 (c)	Sulfur Compounds, Fuel and Emissions Monitoring	not in source category
EUG 4	OAC 252:100-33	Control of Emission of Nitrogen Oxides	below the specified size
EUG 5, 17	OAC 252:100-37	Control of Emission of VOC	below the specified vapor pressure
EUG 5-17, 20-22, 24-25	OAC 252:100-31	Control of Emission of Sulfur Compounds	not in source category
EUG 5-17, 20-22, 24-27	OAC 252:100-33	Control of Emissions of Nitrogen Oxide	not in source category
EUG 6-17, 20-22, 25-27	OAC 252:100-37	Control of Emission of VOC	not in source category

10. The permittee shall apply for a modified operating permit within 180 days of start-up of any new/modified unit constructed under this permit, incorporating the new unit/specifications into the facility operating permit.

11. This facility is considered an existing Prevention of Significant Deterioration (PSD) facility. As such, the facility is subject to the provisions of OAC 252:100-8-36.2(c) for any project as defined therein. [OAC 252:100-8-36.2(c)]

PART 70 PERMIT

AIR QUALITY DIVISION
STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
707 N. ROBINSON, SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

Permit No. 2016-1295-C (M-8)

Koch Fertilizer Enid LLC,

having complied with the requirements of the law, is hereby granted permission to construct the Koch Fertilizer Plant located at 1619 South 78th, Enid, Garfield County, Oklahoma, subject to standard conditions dated June 21, 2016, and specific conditions, both attached.

In the absence of commencement of construction, this permit shall expire 18 months from the issuance date, except as authorized under Section VIII of the Standard Conditions.

Division Director
Air Quality Division

Date

SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

KEVIN STITT
Governor

Koch Fertilizer Enid LLC
Attn: Ms. Lacy Mills
1619 S. 78th Street
Enid, OK 73701

Re: Permit Application No. 2016-1295-C (M-8)
Koch Fertilizer Plant (FAC ID 635)
Enid, Garfield County, Oklahoma

Dear Ms. Mills:

Enclosed is the permit authorizing construction of the referenced facility. Please note that this permit is issued subject to standard and specific conditions, which are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emissions inventory for this facility. An emissions inventory must be completed on approved AQD forms and submitted (hardcopy or electronically) by April 1st of every year. Any questions concerning the form or submittal process should be referred to the Emissions Inventory Staff at (405) 702-4100.

Thank you for your cooperation in this matter. If we may be of further service, please contact our office at (405) 702-4100.

Sincerely,

David S. Schutz, P.E.
AIR QUALITY DIVISION
Enclosure

MAJOR SOURCE AIR QUALITY PERMIT
STANDARD CONDITIONS
(June 21, 2016)

SECTION I. DUTY TO COMPLY

A. This is a permit to operate / construct this specific facility in accordance with the federal Clean Air Act (42 U.S.C. 7401, et al.) and under the authority of the Oklahoma Clean Air Act and the rules promulgated there under. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

B. The issuing Authority for the permit is the Air Quality Division (AQD) of the Oklahoma Department of Environmental Quality (DEQ). The permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

C. The permittee shall comply with all conditions of this permit. Any permit noncompliance shall constitute a violation of the Oklahoma Clean Air Act and shall be grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application. All terms and conditions are enforceable by the DEQ, by the Environmental Protection Agency (EPA), and by citizens under section 304 of the Federal Clean Air Act (excluding state-only requirements). This permit is valid for operations only at the specific location listed.
[40 C.F.R. §70.6(b), OAC 252:100-8-1.3 and OAC 252:100-8-6(a)(7)(A) and (b)(1)]

D. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations. [OAC 252:100-8-6(a)(7)(B)]

SECTION II. REPORTING OF DEVIATIONS FROM PERMIT TERMS

A. Any exceedance resulting from an emergency and/or posing an imminent and substantial danger to public health, safety, or the environment shall be reported in accordance with Section XIV (Emergencies). [OAC 252:100-8-6(a)(3)(C)(iii)(I) & (II)]

B. Deviations that result in emissions exceeding those allowed in this permit shall be reported consistent with the requirements of OAC 252:100-9, Excess Emission Reporting Requirements.
[OAC 252:100-8-6(a)(3)(C)(iv)]

C. Every written report submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F.
[OAC 252:100-8-6(a)(3)(C)(iv)]

SECTION III. MONITORING, TESTING, RECORDKEEPING & REPORTING

A. The permittee shall keep records as specified in this permit. These records, including monitoring data and necessary support information, shall be retained on-site or at a nearby field office for a period of at least five years from the date of the monitoring sample, measurement, report, or application, and shall be made available for inspection by regulatory personnel upon request. Support information includes all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Where appropriate, the permit may specify that records may be maintained in computerized form.

[OAC 252:100-8-6 (a)(3)(B)(ii), OAC 252:100-8-6(c)(1), and OAC 252:100-8-6(c)(2)(B)]

B. Records of required monitoring shall include:

(1) the date, place and time of sampling or measurement;
(2) the date or dates analyses were performed;
(3) the company or entity which performed the analyses;
(4) the analytical techniques or methods used;
(5) the results of such analyses; and
(6) the operating conditions existing at the time of sampling or measurement.

[OAC 252:100-8-6(a)(3)(B)(i)]

C. No later than 30 days after each six (6) month period, after the date of the issuance of the original Part 70 operating permit or alternative date as specifically identified in a subsequent Part 70 operating permit, the permittee shall submit to AQD a report of the results of any required monitoring. All instances of deviations from permit requirements since the previous report shall be clearly identified in the report. Submission of these periodic reports will satisfy any reporting requirement of Paragraph E below that is duplicative of the periodic reports, if so noted on the submitted report. [OAC 252:100-8-6(a)(3)(C)(i) and (ii)]

D. If any testing shows emissions in excess of limitations specified in this permit, the owner or operator shall comply with the provisions of Section II (Reporting Of Deviations From Permit Terms) of these standard conditions. [OAC 252:100-8-6(a)(3)(C)(iii)]

E. In addition to any monitoring, recordkeeping or reporting requirement specified in this permit, monitoring and reporting may be required under the provisions of OAC 252:100-43, Testing, Monitoring, and Recordkeeping, or as required by any provision of the Federal Clean Air Act or Oklahoma Clean Air Act. [OAC 252:100-43]

F. Any Annual Certification of Compliance, Semi Annual Monitoring and Deviation Report, Excess Emission Report, and Annual Emission Inventory submitted in accordance with this permit shall be certified by a responsible official. This certification shall be signed by a responsible official, and shall contain the following language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete."

[OAC 252:100-8-5(f), OAC 252:100-8-6(a)(3)(C)(iv), OAC 252:100-8-6(c)(1), OAC 252:100-9-7(e), and OAC 252:100-5-2.1(f)]

G. Any owner or operator subject to the provisions of New Source Performance Standards ("NSPS") under 40 CFR Part 60 or National Emission Standards for Hazardous Air Pollutants ("NESHAPs") under 40 CFR Parts 61 and 63 shall maintain a file of all measurements and other

information required by the applicable general provisions and subpart(s). These records shall be maintained in a permanent file suitable for inspection, shall be retained for a period of at least five years as required by Paragraph A of this Section, and shall include records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of an affected facility, any malfunction of the air pollution control equipment; and any periods during which a continuous monitoring system or monitoring device is inoperative.

[40 C.F.R. §§60.7 and 63.10, 40 CFR Parts 61, Subpart A, and OAC 252:100, Appendix Q]

H. The permittee of a facility that is operating subject to a schedule of compliance shall submit to the DEQ a progress report at least semi-annually. The progress reports shall contain dates for achieving the activities, milestones or compliance required in the schedule of compliance and the dates when such activities, milestones or compliance was achieved. The progress reports shall also contain an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted. [OAC 252:100-8-6(c)(4)]

I. All testing must be conducted under the direction of qualified personnel by methods approved by the Division Director. All tests shall be made and the results calculated in accordance with standard test procedures. The use of alternative test procedures must be approved by EPA. When a portable analyzer is used to measure emissions it shall be setup, calibrated, and operated in accordance with the manufacturer's instructions and in accordance with a protocol meeting the requirements of the "AQD Portable Analyzer Guidance" document or an equivalent method approved by Air Quality.

[OAC 252:100-8-6(a)(3)(A)(iv), and OAC 252:100-43]

J. The reporting of total particulate matter emissions as required in Part 7 of OAC 252:100-8 (Permits for Part 70 Sources), OAC 252:100-19 (Control of Emission of Particulate Matter), and OAC 252:100-5 (Emission Inventory), shall be conducted in accordance with applicable testing or calculation procedures, modified to include back-half condensables, for the concentration of particulate matter less than 10 microns in diameter (PM_{10}). NSPS may allow reporting of only particulate matter emissions caught in the filter (obtained using Reference Method 5).

K. The permittee shall submit to the AQD a copy of all reports submitted to the EPA as required by 40 C.F.R. Part 60, 61, and 63, for all equipment constructed or operated under this permit subject to such standards. [OAC 252:100-8-6(c)(1) and OAC 252:100, Appendix Q]

SECTION IV. COMPLIANCE CERTIFICATIONS

A. No later than 30 days after each anniversary date of the issuance of the original Part 70 operating permit or alternative date as specifically identified in a subsequent Part 70 operating permit, the permittee shall submit to the AQD, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit and of any other applicable requirements which have become effective since the issuance of this permit.

[OAC 252:100-8-6(c)(5)(A), and (D)]

B. The compliance certification shall describe the operating permit term or condition that is the basis of the certification; the current compliance status; whether compliance was continuous or intermittent; the methods used for determining compliance, currently and over the reporting period. The compliance certification shall also include such other facts as the permitting authority may require to determine the compliance status of the source.

[OAC 252:100-8-6(c)(5)(C)(i)-(v)]

C. The compliance certification shall contain a certification by a responsible official as to the results of the required monitoring. This certification shall be signed by a responsible official, and shall contain the following language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete." [OAC 252:100-8-5(f) and OAC 252:100-8-6(c)(1)]

D. Any facility reporting noncompliance shall submit a schedule of compliance for emissions units or stationary sources that are not in compliance with all applicable requirements. This schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the emissions unit or stationary source is in noncompliance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the emissions unit or stationary source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based, except that a compliance plan shall not be required for any noncompliance condition which is corrected within 24 hours of discovery.

[OAC 252:100-8-5(e)(8)(B) and OAC 252:100-8-6(c)(3)]

SECTION V. REQUIREMENTS THAT BECOME APPLICABLE DURING THE PERMIT TERM

The permittee shall comply with any additional requirements that become effective during the permit term and that are applicable to the facility. Compliance with all new requirements shall be certified in the next annual certification. [OAC 252:100-8-6(c)(6)]

SECTION VI. PERMIT SHIELD

A. Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC 252:100-8) shall be deemed compliance with the applicable requirements identified and included in this permit. [OAC 252:100-8-6(d)(1)]

B. Those requirements that are applicable are listed in the Standard Conditions and the Specific Conditions of this permit. Those requirements that the applicant requested be determined as not applicable are summarized in the Specific Conditions of this permit. [OAC 252:100-8-6(d)(2)]

SECTION VII. ANNUAL EMISSIONS INVENTORY & FEE PAYMENT

The permittee shall file with the AQD an annual emission inventory and shall pay annual fees based on emissions inventories. The methods used to calculate emissions for inventory purposes shall be based on the best available information accepted by AQD.
[OAC 252:100-5-2.1, OAC 252:100-5-2.2, and OAC 252:100-8-6(a)(8)]

SECTION VIII. TERM OF PERMIT

A. Unless specified otherwise, the term of an operating permit shall be five years from the date of issuance. [OAC 252:100-8-6(a)(2)(A)]

B. A source's right to operate shall terminate upon the expiration of its permit unless a timely and complete renewal application has been submitted at least 180 days before the date of expiration. [OAC 252:100-8-7.1(d)(1)]

C. A duly issued construction permit or authorization to construct or modify will terminate and become null and void (unless extended as provided in OAC 252:100-8-1.4(b)) if the construction is not commenced within 18 months after the date the permit or authorization was issued, or if work is suspended for more than 18 months after it is commenced. [OAC 252:100-8-1.4(a)]

D. The recipient of a construction permit shall apply for a permit to operate (or modified operating permit) within 180 days following the first day of operation. [OAC 252:100-8-4(b)(5)]

SECTION IX. SEVERABILITY

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
[OAC 252:100-8-6 (a)(6)]

SECTION X. PROPERTY RIGHTS

A. This permit does not convey any property rights of any sort, or any exclusive privilege.
[OAC 252:100-8-6(a)(7)(D)]

B. This permit shall not be considered in any manner affecting the title of the premises upon which the equipment is located and does not release the permittee from any liability for damage to persons or property caused by or resulting from the maintenance or operation of the equipment for which the permit is issued. [OAC 252:100-8-6(c)(6)]

SECTION XI. DUTY TO PROVIDE INFORMATION

A. The permittee shall furnish to the DEQ, upon receipt of a written request and within sixty (60) days of the request unless the DEQ specifies another time period, any information that the DEQ may request to determine whether cause exists for modifying, reopening, revoking, reissuing, terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the DEQ copies of records required to be kept by the permit.

[OAC 252:100-8-6(a)(7)(E)]

B. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 27A O.S. § 2-5-105(18). Confidential information shall be clearly labeled as such and shall be separable from the main body of the document such as in an attachment.

[OAC 252:100-8-6(a)(7)(E)]

C. Notification to the AQD of the sale or transfer of ownership of this facility is required and shall be made in writing within thirty (30) days after such sale or transfer.

[Oklahoma Clean Air Act, 27A O.S. § 2-5-112(G)]

SECTION XII. REOPENING, MODIFICATION & REVOCATION

A. The permit may be modified, revoked, reopened and reissued, or terminated for cause. Except as provided for minor permit modifications, the filing of a request by the permittee for a permit modification, revocation and reissuance, termination, notification of planned changes, or anticipated noncompliance does not stay any permit condition.

[OAC 252:100-8-6(a)(7)(C) and OAC 252:100-8-7.2(b)]

B. The DEQ will reopen and revise or revoke this permit prior to the expiration date in the following circumstances: [OAC 252:100-8-7.3 and OAC 252:100-8-7.4(a)(2)]

(1) Additional requirements under the Clean Air Act become applicable to a major source category three or more years prior to the expiration date of this permit. No such reopening is required if the effective date of the requirement is later than the expiration date of this permit.
(2) The DEQ or the EPA determines that this permit contains a material mistake or that the permit must be revised or revoked to assure compliance with the applicable requirements.
(3) The DEQ or the EPA determines that inaccurate information was used in establishing the emission standards, limitations, or other conditions of this permit. The DEQ may revoke and not reissue this permit if it determines that the permittee has submitted false or misleading information to the DEQ.
(4) DEQ determines that the permit should be amended under the discretionary reopening provisions of OAC 252:100-8-7.3(b).

C. The permit may be reopened for cause by EPA, pursuant to the provisions of OAC 100-8-7.3(d). [OAC 100-8-7.3(d)]

D. The permittee shall notify AQD before making changes other than those described in Section XVIII (Operational Flexibility), those qualifying for administrative permit amendments, or those defined as an Insignificant Activity (Section XVI) or Trivial Activity (Section XVII). The notification should include any changes which may alter the status of a "grandfathered source," as defined under AQD rules. Such changes may require a permit modification.

[OAC 252:100-8-7.2(b) and OAC 252:100-5-1.1]

E. Activities that will result in air emissions that exceed the trivial/insignificant levels and that are not specifically approved by this permit are prohibited. [OAC 252:100-8-6(c)(6)]

SECTION XIII. INSPECTION & ENTRY

A. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized regulatory officials to perform the following (subject to the permittee's right to seek confidential treatment pursuant to 27A O.S. Supp. 1998, § 2-5-105(17) for confidential information submitted to or obtained by the DEQ under this section):

(1) enter upon the permittee's premises during reasonable/normal working hours where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
(2) have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
(3) inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
(4) as authorized by the Oklahoma Clean Air Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit.

[OAC 252:100-8-6(c)(2)]

SECTION XIV. EMERGENCIES

A. Any exceedance resulting from an emergency shall be reported to AQD promptly but no later than 4:30 p.m. on the next working day after the permittee first becomes aware of the exceedance. This notice shall contain a description of the emergency, the probable cause of the exceedance, any steps taken to mitigate emissions, and corrective actions taken.

[OAC 252:100-8-6 (a)(3)(C)(iii)(I) and (IV)]

B. Any exceedance that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to AQD as soon as is practicable; but under no circumstance shall notification be more than 24 hours after the exceedance. [OAC 252:100-8-6(a)(3)(C)(iii)(II)]

C. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error. [OAC 252:100-8-2]

D. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that: [OAC 252:100-8-6 (e)(2)]

(1) an emergency occurred and the permittee can identify the cause or causes of the emergency;
(2) the permitted facility was at the time being properly operated;
(3) during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit.

E. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof. [OAC 252:100-8-6(e)(3)]

F. Every written report or document submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F.
[OAC 252:100-8-6(a)(3)(C)(iv)]

SECTION XV. RISK MANAGEMENT PLAN

The permittee, if subject to the provision of Section 112(r) of the Clean Air Act, shall develop and register with the appropriate agency a risk management plan by June 20, 1999, or the applicable effective date. [OAC 252:100-8-6(a)(4)]

SECTION XVI. INSIGNIFICANT ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate individual emissions units that are either on the list in Appendix I to OAC Title 252, Chapter 100, or whose actual calendar year emissions do not exceed any of the limits below. Any activity to which a State or Federal applicable requirement applies is not insignificant even if it meets the criteria below or is included on the insignificant activities list.

(1) 5 tons per year of any one criteria pollutant.
(2) 2 tons per year for any one hazardous air pollutant (HAP) or 5 tons per year for an aggregate of two or more HAP's, or 20 percent of any threshold less than 10 tons per year for single HAP that the EPA may establish by rule.

[OAC 252:100-8-2 and OAC 252:100, Appendix I]

SECTION XVII. TRIVIAL ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate any individual or combination of air emissions units that are considered inconsequential and are on the list in Appendix J. Any activity to which a State or Federal applicable requirement applies is not trivial even if included on the trivial activities list.

[OAC 252:100-8-2 and OAC 252:100, Appendix J]

SECTION XVIII. OPERATIONAL FLEXIBILITY

A. A facility may implement any operating scenario allowed for in its Part 70 permit without the need for any permit revision or any notification to the DEQ (unless specified otherwise in the permit). When an operating scenario is changed, the permittee shall record in a log at the facility the scenario under which it is operating. [OAC 252:100-8-6(a)(10) and (f)(1)]

B. The permittee may make changes within the facility that:

(1) result in no net emissions increases,
(2) are not modifications under any provision of Title I of the federal Clean Air Act, and
(3) do not cause any hourly or annual permitted emission rate of any existing emissions unit to be exceeded;

provided that the facility provides the EPA and the DEQ with written notification as required below in advance of the proposed changes, which shall be a minimum of seven (7) days, or twenty four (24) hours for emergencies as defined in OAC 252:100-8-6 (e). The permittee, the DEQ, and the EPA shall attach each such notice to their copy of the permit. For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The permit shield provided by this permit does not apply to any change made pursuant to this paragraph. [OAC 252:100-8-6(f)(2)]

SECTION XIX. OTHER APPLICABLE & STATE-ONLY REQUIREMENTS

A. The following applicable requirements and state-only requirements apply to the facility unless elsewhere covered by a more restrictive requirement:

(1) Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in the Open Burning Subchapter. [OAC 252:100-13]

(2) No particulate emissions from any fuel-burning equipment with a rated heat input of 10 MMBTUH or less shall exceed 0.6 lb/MMBTU. [OAC 252:100-19]

(3) For all emissions units not subject to an opacity limit promulgated under 40 C.F.R., Part 60, NSPS, no discharge of greater than 20% opacity is allowed except for: [OAC 252:100-25]

(a) Short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity;
(b) Smoke resulting from fires covered by the exceptions outlined in OAC 252:100-13-7;
(c) An emission, where the presence of uncombined water is the only reason for failure to meet the requirements of OAC 252:100-25-3(a); or
(d) Smoke generated due to a malfunction in a facility, when the source of the fuel producing the smoke is not under the direct and immediate control of the facility and

the immediate constriction of the fuel flow at the facility would produce a hazard to life and/or property.

(4) No visible fugitive dust emissions shall be discharged beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. [OAC 252:100-29]

(5) No sulfur oxide emissions from new gas-fired fuel-burning equipment shall exceed 0.2 lb/MMBTU. No existing source shall exceed the listed ambient air standards for sulfur dioxide. [OAC 252:100-31]

(6) Volatile Organic Compound (VOC) storage tanks built after December 28, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill pipe or with a vapor-recovery system. [OAC 252:100-37-15(b)]

(7) All fuel-burning equipment shall at all times be properly operated and maintained in a manner that will minimize emissions of VOCs. [OAC 252:100-37-36]

SECTION XX. STRATOSPHERIC OZONE PROTECTION

A. The permittee shall comply with the following standards for production and consumption of ozone-depleting substances: [40 CFR 82, Subpart A]

(1) Persons producing, importing, or placing an order for production or importation of certain class I and class II substances, HCFC-22, or HCFC-141b shall be subject to the requirements of §82.4;
(2) Producers, importers, exporters, purchasers, and persons who transform or destroy certain class I and class II substances, HCFC-22, or HCFC-141b are subject to the recordkeeping requirements at §82.13; and
(3) Class I substances (listed at Appendix A to Subpart A) include certain CFCs, Halons, HBFCs, carbon tetrachloride, trichloroethane (methyl chloroform), and bromomethane (Methyl Bromide). Class II substances (listed at Appendix B to Subpart A) include HCFCs.

B. If the permittee performs a service on motor (fleet) vehicles when this service involves an ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all applicable requirements. Note: The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant. [40 CFR 82, Subpart B]

C. The permittee shall comply with the following standards for recycling and emissions reduction except as provided for MVACs in Subpart B: [40 CFR 82, Subpart F]

(1) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to § 82.156;
(2) Equipment used during the maintenance, service, repair, or disposal of appliances must

comply with the standards for recycling and recovery equipment pursuant to § 82.158;
(3) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to § 82.161;
(4) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record-keeping requirements pursuant to § 82.166;
(5) Persons owning commercial or industrial process refrigeration equipment must comply with leak repair requirements pursuant to § 82.158; and
(6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to § 82.166.

SECTION XXI. TITLE V APPROVAL LANGUAGE

A. DEQ wishes to reduce the time and work associated with permit review and, wherever it is not inconsistent with Federal requirements, to provide for incorporation of requirements established through construction permitting into the Source's Title V permit without causing redundant review. Requirements from construction permits may be incorporated into the Title V permit through the administrative amendment process set forth in OAC 252:100-8-7.2(a) only if the following procedures are followed:

(1) The construction permit goes out for a 30-day public notice and comment using the procedures set forth in 40 C.F.R. § 70.7(h)(1). This public notice shall include notice to the public that this permit is subject to EPA review, EPA objection, and petition to EPA, as provided by 40 C.F.R. § 70.8; that the requirements of the construction permit will be incorporated into the Title V permit through the administrative amendment process; that the public will not receive another opportunity to provide comments when the requirements are incorporated into the Title V permit; and that EPA review, EPA objection, and petitions to EPA will not be available to the public when requirements from the construction permit are incorporated into the Title V permit.
(2) A copy of the construction permit application is sent to EPA, as provided by 40 CFR § 70.8(a)(1).
(3) A copy of the draft construction permit is sent to any affected State, as provided by 40 C.F.R. § 70.8(b).
(4) A copy of the proposed construction permit is sent to EPA for a 45-day review period as provided by 40 C.F.R.§ 70.8(a) and (c).
(5) The DEQ complies with 40 C.F.R. § 70.8(c) upon the written receipt within the 45-day comment period of any EPA objection to the construction permit. The DEQ shall not issue the permit until EPA's objections are resolved to the satisfaction of EPA.
(6) The DEQ complies with 40 C.F.R. § 70.8(d).
(7) A copy of the final construction permit is sent to EPA as provided by 40 CFR § 70.8(a).
(8) The DEQ shall not issue the proposed construction permit until any affected State and EPA have had an opportunity to review the proposed permit, as provided by these permit conditions.
(9) Any requirements of the construction permit may be reopened for cause after incorporation into the Title V permit by the administrative amendment process, by DEQ as provided in OAC 252:100-8-7.3(a), (b), and (c), and by EPA as provided in 40 C.F.R. § 70.7(f) and (g).

(10) The DEQ shall not issue the administrative permit amendment if performance tests fail to demonstrate that the source is operating in substantial compliance with all permit requirements.

B. To the extent that these conditions are not followed, the Title V permit must go through the Title V review process.

SECTION XXII. CREDIBLE EVIDENCE

For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any provision of the Oklahoma implementation plan, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed. [OAC 252:100-43-6]

Department of Environmental Quality (DEQ)
Air Quality Division (AQD)
Acronym List
2-9-21

ACFM	Actual Cubic Feet per Minute
AD	Applicability Determination
AFRC	Air-to-Fuel Ratio Controller
API	American Petroleum Institute
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BAE	Baseline Actual Emissions
BHP	Brake Horsepower (bhp)
BTU	British thermal unit (Btu)
C&E	Compliance and Enforcement
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CAS	Chemical Abstract Service
CAAA	Clean Air Act Amendments
CC	Catalytic Converter
CCR	Continuous Catalyst Regeneration
CD	Consent Decree
CEM	Continuous Emission Monitor
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CI	Compression Ignition
CNG	Compressed Natural Gas
CO	Carbon Monoxide or Consent Order
COA	Capable of Accommodating
COM	Continuous Opacity Monitor
D	Day
DEF	Diesel Exhaust Fluid
DG	Demand Growth
DSCF	Dry Standard (At Standard Conditions) Cubic Foot (Feet)
EGU	Electric Generating Unit
EI	Emissions Inventory
EPA	Environmental Protection Agency
ESP	Electrostatic Precipitator
EUG	Emissions Unit Group
EUSGU	Electric Utility Steam Generating Unit
FCE	Full Compliance Evaluation
FCCU	Fluid Catalytic Cracking Unit
FIP	Federal Implementation Plan
FR	Federal Register
GACT	Generally Achievable Control Technology
GAL	Gallon (gal)
GDF	Gasoline Dispensing Facility
GEP	Good Engineering Practice
GHG	Greenhouse Gases
GR	Grain(s) (gr)
H_2CO	Formaldehyde
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutants
HC	Hydrocarbon
HCFC	Hydrochlorofluorocarbon
HFR	Horizontal Fixed Roof
HON	Hazardous Organic NESHAP
HP	Horsepower (hp)
HR	Hour (hr)
I&M	Inspection and Maintenance
IBR	Incorporation by Reference
ICE	Internal Combustion Engine
LAER	Lowest Achievable Emission Rate
LB	Pound(s) [Mass] (lb, lbs, lbm)
LB/HR	Pound(s) per Hour (lb/hr)
LDAR	Leak Detection and Repair
LNG	Liquefied Natural Gas
LT	Long Ton(s) (metric)
M	Thousand (Roman Numeral)
MAAC	Maximum Acceptable Ambient Concentration
MACT	Maximum Achievable Control Technology
MM	Prefix used for Million (Thousand-Thousand)
MMBTU	Million British Thermal Units (MMBtu)
MMBTUH	Million British Thermal Units per Hour (MMBtu/hr)
MMSCF	Million Standard Cubic Feet (MMscf)
MMSCFD	Million Standard Cubic Feet per Day
MSDS	Material Safety Data Sheet
MWC	Municipal Waste Combustor
MWe	Megawatt Electrical
NA	Nonattainment
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System
NESHAP	National Emission Standards for Hazardous Air Pollutants
NH_3	Ammonia
NMHC	Non-methane Hydrocarbon
NGL	Natural Gas Liquids
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NOI	Notice of Intent
NSCR	Non-Selective Catalytic Reduction
NSPS	New Source Performance Standards
NSR	New Source Review

O_3	Ozone
O&G	Oil and Gas
O&M	Operation and Maintenance
O&NG	Oil and Natural Gas
OAC	Oklahoma Administrative Code
OC	Oxidation Catalyst
PAH	Polycyclic Aromatic Hydrocarbons
PAE	Projected Actual Emissions
PAL	Plant-wide Applicability Limit
Pb	Lead
PBR	Permit by Rule
PCB	Polychlorinated Biphenyls
PCE	Partial Compliance Evaluation
PEA	Portable Emissions Analyzer
PFAS	Per- and Polyfluoroalkyl Substance
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter with an Aerodynamic Diameter <= 2.5 Micrometers
PM_{10}	Particulate Matter with an Aerodynamic Diameter <= 10 Micrometers
POM	Particulate Organic Matter or Polycyclic Organic Matter
ppb	Parts per Billion
ppm	Parts per Million
ppmv	Parts per Million Volume
ppmvd	Parts per Million Dry Volume
PSD	Prevention of Significant Deterioration
psi	Pounds per Square Inch
psia	Pounds per Square Inch Absolute
psig	Pounds per Square Inch Gage
RACT	Reasonably Available Control Technology
RATA	Relative Accuracy Test Audit
RFG	Refinery Fuel Gas
RICE	Reciprocating Internal Combustion Engine
RO	Responsible Official
ROAT	Regional Office at Tulsa
RVP	Reid Vapor Pressure
SCC	Source Classification Code
SCF	Standard Cubic Foot
SCFD	Standard Cubic Feet per Day
SCFM	Standard Cubic Feet per Minute
SCR	Selective Catalytic Reduction
SER	Significant Emission Rate
SI	Spark Ignition
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SNCR	Selective Non-Catalytic Reduction
SO_2	Sulfur Dioxide
SOx	Sulfur Oxides
SOP	Standard Operating Procedure
SRU	Sulfur Recovery Unit
T	Tons
TAC	Toxic Air Contaminant
THC	Total Hydrocarbons
TPY	Tons per Year
TRS	Total Reduced Sulfur
TSP	Total Suspended Particulates
TV	Title V of the Federal Clean Air Act
$\mu g/m^3$	Micrograms per Cubic Meter
US EPA	U. S. Environmental Protection Agency
VFR	Vertical Fixed Roof
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
VOL	Volatile Organic Liquid
VRT	Vapor Recovery Tower
VRU	Vapor Recovery Unit
YR	Year
2SLB	2-Stroke Lean Burn
4SLB	4-Stroke Lean Burn
4SRB	4-Stroke Rich Burn

SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

KEVIN STITT
Governor

March 17, 2021

Ms. Lacy Mills, Environmental Engineering Leader
Koch Fertilizer Enid
1619 South 78th
Enid, Oklahoma 73701

SUBJECT: **Permit Application No. 2016-1295-C (M-6)**
Enid Nitrogen Plant (SIC 2873)
1619 South 78th
Enid, Garfield County, Oklahoma
Location: Section 17, T22N, R5W

Dear Ms. Mills:

Air Quality Division has completed the initial review of your construction permit application referenced above. This application has been determined to be a **Tier II**. In accordance with 27A O.S. § 2-14-302 and OAC 252:4-7-13(c) the draft permit is now ready for public review. The requirements for public review of the draft permit include the following steps, which you must accomplish:

1. Publish at least one legal notice (one day) in at least one newspaper of general circulation within the county where the facility is located. (Instructions enclosed).
2. Provide for public review (for a period of 30 days following the date of the newspaper announcement) a copy of the draft permit at a convenient location within the county of the facility such as the public library in the county seat.
3. Send AQD a written affidavit of publication for the notice from Item #1 above together with any additional comments or requested changes which you may have for the permit application within 20 days of publication.

After public review, a Proposed Permit will be submitted for EPA review. Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact the permit writer at (405) 702-4100.

Sincerely,

Phillip Fielder

Phillip Fielder, P.E.
Chief Engineer
AIR QUALITY DIVISION

SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

KEVIN STITT
Governor

March 17, 2021

KDHE, BAR
Forbes Field, Building 283
Topeka, KS 66620

SUBJECT: **Permit Application No. 2016-1295-C (M-6)**
Enid Nitrogen Plant (SIC 2873)
1619 South 78th
Enid, Garfield County, Oklahoma
Location: Section 17, T22N, R5W
Permit Writer: David Schutz

Dear Sir / Madame:

The subject facility has requested a construction permit for a significant modification to a Part 70 source. Air Quality Division has completed the initial review of the application and prepared a draft permit for public review. Since this facility is within 50 miles of the Oklahoma - **Kansas** border, a copy of the draft permit will be provided to you upon request.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me or the permit writer at (405) 702-4100.

Sincerely,

Phillip Fielder

Phillip Fielder, P.E.
Chief Engineer
AIR QUALITY DIVISION

Department of Environmental Quality (DEQ)
Air Quality Division (AQD)
Acronym List
2-9-21

NOTICE OF DRAFT PERMIT TIER II or TIER III AIR QUALITY PERMIT APPLICATION

APPLICANT RESPONSIBILITIES
Permit applicants are required to give public notice that a Tier II or Tier III draft permit has been prepared by DEQ. The notice must be published in one newspaper local to the site or facility. Upon publication, a signed affidavit of publication must be obtained from the newspaper and sent to AQD. Note that if either the applicant or the public requests a public meeting, this must be arranged through the Customer Services Division of the DEQ.

REQUIRED CONTENT (27A O.S. § 2-14-302 and OAC 252:4-7-13(c))

1. A statement that a Tier II or Tier III draft permit has been prepared by DEQ;
2. Name and address of the applicant;
3. Name, address, driving directions, legal description and county of the site or facility;
4. The type of permit or permit action being sought;
5. A description of activities to be regulated, including an estimate of emissions from the facility;
6. Location(s) where the application and draft permit may be reviewed ;
7. Name, address, and telephone number of the applicant and DEQ contacts;
8. Any additional information required by DEQ rules or deemed relevant by applicant;
9. A 30-day opportunity to request a formal public meeting on the draft permit.

SAMPLE NOTICE on page 2.

SAMPLE NOTICE *(Italicized print is to be filled in by the applicant.)***:**

DEQ NOTICE OF TIER *…II or III…* **DRAFT PERMIT**

A Tier *…II or III…* **application for an air quality** *…type of permit or permit action being sought (e.g., Construction Permit for a Major Facility)…* **has been filed with the Oklahoma Department of Environmental Quality (DEQ) by applicant,** *…name and address.*

The applicant requests approval to *…brief description of purpose of application…* **at the** *…site/facility name … …***[proposed to be] located at** *…physical address (if any), driving directions, and legal description including county…***..**

In response to the application, DEQ has prepared a draft permit [modification] (Permit Number: *…xx-xxx-x…***), which may be reviewed at** *…locations (one must be in the county where the site/facility is located)…* **or at the Air Quality Division's main office (see address below). The draft permit is also available for review in the Air Quality Section of DEQ's Web Page: http://www.deq.ok.gov/**

This draft permit would authorize the facility to emit the following regulated pollutants: *(list each pollutant and amounts in tons per year (TPY))*

The public comment period ends 30 days after the date of publication of this notice. Any person may submit written comments concerning the draft permit to the Air Quality Division contact listed below. [Modifications only, add: **Only those issues relevant to the proposed modification(s) are open for comment.**] **A public meeting on the draft permit [modification] may also be requested in writing at the same address. Note that all public meetings are to be arranged and conducted by DEQ/CSD staff.**

In addition to the public comment opportunity offered under this notice, this draft permit is subject to U.S. Environmental Protection Agency (EPA) review, EPA objection, and petition to EPA, as provided by 40 CFR § 70.8. [For Construction Permits, add: **The requirements of the construction permit will be incorporated into the Title V permit through the administrative amendment process. Therefore, no additional opportunity to provide comments or EPA review, EPA objection, and petitions to EPA will be available to the public when requirements from the construction permit are incorporated into the Title V permit.**]

If the Administrator (EPA) does not object to the proposed permit, the public has 60 days following the Administrator's 45 day review period to petition the Administrator to make such an objection as provided in 40 CFR 70.8(d) and in OAC 252:100-8-8(j). Information on all permit actions and applicable review time lines is available in the Air Quality section of the DEQ Web page: http://www.deq.ok.gov/**.**

For additional information, contact *…names, addresses and telephone numbers of contact persons for the applicant,* **or contact DEQ at: Chief Engineer, Permits & Engineering Group, Air Quality Division, 707 N. Robinson, Suite 4100, P.O. Box 1677, Oklahoma City, OK, 73101-1677. Phone No. (405) 702-4100.**