



**Fred Werth**  
Plant Manager

**Nutrien Kenai Nitrogen Operations**  
P.O. Box 575  
Kenai, AK 99611  
Direct Line: (907) 776-8121  
Mobile: (907) 395-7626  
Facsimile: (907) 776-5579  
Email: [Frederick.Werth@nutrien.com](mailto:Frederick.Werth@nutrien.com)

October 25, 2023

Jim Plosay, Air Permit Program Manager  
Alaska Department of Environmental Conservation  
Division of Air Quality  
410 Willoughby Avenue, Suite 303  
Juneau, Alaska 99811-1800

Re: Permit Extension Request  
Air Quality Control Construction Permit AQ0083CPT07  
Kenai Nitrogen Operations  
Kenai, Alaska

Dear Mr. Plosay:

Nutrien US LLC (Nutrien) was issued Air Quality Control Construction Permit AQ0083CPT07 on 26 March 2021 for the proposed restart of a portion of its Kenai Nitrogen Operations (KNO) fertilizer operation in Kenai, Alaska. The Alaska Department of Environmental Conservation (ADEC) extended this permit for an additional eighteen (18) months until 26 March 2024 to allow more time for Nutrien to commence construction on this project. Although progress is being made in securing necessary natural gas contracts for the project, Nutrien is now requesting an additional eighteen (18) month extension of Air Quality Control Construction Permit AQ0083CPT07. Additional information concerning this request is provided below.

## **Background**

In May 2020 Nutrien submitted a Prevention of Significant Deterioration (PSD) permit application to restart portions of the KNO fertilizer plant. This resulted in the issuance of Air Quality Construction Permit AQ0083CPT07 on 26 March 2021. On 7 June 2022, Nutrien submitted a request to extend the expiration date of this permit by eighteen (18) months to allow additional time to secure natural gas commitments for the project. This request was approved on 22 July 2022,

which extended the expiration date for the permit from 26 September 2022 to 26 March 2024. Although Nutrien has worked to secure necessary natural gas contracts for the facility since the issuance of this permit, for a variety of reasons these negotiations are still on-going. Nutrien continues to pursue sufficient natural gas in order to assure viable operations at KNO. Nutrien does not, however, wish to begin construction on the modifications necessary to the plant, which will involve a substantial capital investment, until such time as it has contractual assurances that sufficient natural gas is available to operate the facility at target production levels.

While Nutrien is hopeful that it will be able to secure the desired contracts, the delay in securing necessary contracts will delay the date by which Nutrien will wish to begin operation of the plant, resulting in the need to delay the date by which construction will commence. An extension for an additional eighteen (18) months will allow time for negotiations to continue to secure necessary natural gas contracts.

## **Construction Permit and PSD Commence Construction Requirements**

Condition 2 of the Construction Permit issued by ADEC specifies that “the Permittee shall commence construction of the modification to the stationary source authorized under Construction Permit AQ0083CPT07 within 18 months of the issuance of the permit unless granted an extension in writing from the Department”. Likewise, PSD rules contained in 40 CFR 52.21(r)(2) specify that approval to construct will become invalid if construction is not commenced within 18 months of permit issuance, unless an extension to the permit is requested and granted. The 22 July 2022 extension approval letter from ADEC specifies that “...construction of KNO commence no later than March 26, 2024”.

Neither the Construction Permit nor PSD rule language provides any details on the appropriate content of a second extension request or the information the Administrator may require in granting such an extension.

## **EPA Guidance**

Current EPA guidance on the circumstances under which a PSD permit may be extended is contained in a memorandum from Stephen Page dated 31 January 2014 (Extension Memorandum)<sup>1</sup>. As described in the Extension Memorandum

---

<sup>1</sup> “Guidance on Extension of Prevention of Significant Deterioration (PSD) Permits under 40 CFR 52.21(r)(2)”, Stephen D. Page, Director Office of Air Quality Planning and Standards, to Regional Air Division Directors, 31 January 2014.

and in accordance with 40 C.F.R. 52.21(r)(2), EPA indicates that such extensions should be evaluated on a case-by-case basis, and that such requests should be made in advance of the end of the deadline for commencing construction. The Extension Memorandum indicates that an extensive reevaluation of BACT and the air quality impacts analysis “should generally not be necessary for a first permit extension request”. The Extension Memorandum stipulates that a second extension request of the commencement of construction deadline should contain “a substantive re-analysis and update of PSD requirements” in addition to detailed justification as to the reasons that the extension is necessary.

## **BACT Update**

To support this second permit extension request, Nutrien has researched the RACT/BACT/LAER Clearinghouse (RBLC) to identify any permits issued since the date of the KNO Construction Permit that might contain a more stringent Best Available Control Technology (BACT) emission limit than was established for KNO. The results of this search for the principal emission units at KNO are discussed briefly below:

- Primary Reformer (Unit 12) – No new RBLC entries were identified in the database for reformers at fertilizer plants since the last extension request.
- CO<sub>2</sub> Vent (Unit 14) – No new RBLC entries were identified in the database for CO<sub>2</sub> Vent or CO<sub>2</sub> Stripper since the last extension request.
- Flares (Units 22, 23, and 11) – No new RBLC entries were identified in the database for fertilizer plant flares since the last extension request.
- MDEA Storage Tanks and UF85 Tank (Units 41A, 41B, and 41C) – No new RBLC entries were identified in the database for MDEA storage tanks since the last extension request.
- Startup Heater (Unit 13) – Two RBLC entries were found for Orange County Advanced Power Station (RBLC TX-0939) and INEOS Oligomers USA (RBLC TX-0955). The BACT limits contained in these permits are no more stringent than limits contained in permits that were reviewed as a part of the BACT analysis submitted with the KNO permit application.
- Urea Granulation (Units 35 and 36) – No new RBLC entries were identified in the database for urea granulation units since the last extension request.

- Cooling Towers (Unit 40) – Seventeen (17) new RBLC entries were identified in the database for cooling towers since the last extension request. The BACT limits contained in these permits are no more stringent than limits contained in permits that were reviewed as a part of the BACT analysis submitted with the KNO permit application.
- Package Boilers (Units 44, 48, and 49) – One (1) new entry in the RBLC was found for sources with boilers or process heaters with a heat input above 100 mmBtu/hr but less than 250 mmBtu/hr. The BACT limits contained in this permit are no more stringent than limits contained in permits that were reviewed as a part of the BACT analysis submitted with the KNO permit application.
- Urea Material Handling Units (Unit 47A, B, C, and D) – No new RBLC entries were identified in the database for urea transfer or urea loading since the previous extension request.
- Solar Turbine/Generator Sets (Units 55, 56, 57, 58, and 59) – No new RBLC entries were found for combined cycle & cogen <25 MW turbines since the last extension request.
- Waste Heat Boilers (Units 50, 51, 52, 53, and 54) – Eleven (11) new RBLC entries were identified for boiler and heater <100 MMBtu/hr. Four (4) BACT determinations were more stringent than those reviewed as part of the KNO application and are included in the table below.

<b>RBLC ID</b>	<b>Limitation</b>
IN-0359	FPM/TPM <sub>10</sub> /PM <sub>10</sub> : 0.0007 lb/MMBtu
IL-0133	TPM: 0.0019 lb/MMBtu VOC: 0.0015 lb/MMBtu
AR-0173	FPM <sub>10</sub> /FPM <sub>2.5</sub> : 0.0007 lb/MMBtu
AR-0172	FPM: 0.0019 lb/MMBtu

Because emissions from each of the Waste Heat Boilers and corresponding Solar Turbines will exhaust from a single stack, the BACT limit applicable to these units was established as a single limit for the two units combined. The combined limit for each pair of Solar Turbines and Waste Heat Boilers was set at 0.0075 lb/MMBtu for PM, PM<sub>10</sub>, and PM<sub>2.5</sub> and at 0.036 lb/MMBtu for VOC emissions. The BACT determination for the Waste Heat Boilers for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, and VOC emissions was based on the use of good combustion practices and natural gas fuel to limit emissions. Numeric emission limits used to establish the PM, PM<sub>10</sub>, PM<sub>2.5</sub>, and VOC BACT limits for the Waste Heat Boilers were based on

standard AP-42 emission factors for natural gas combustion from boilers less than 100 mmBtu/hr in size.

The four (4) BACT determinations summarized above related to PM emissions likewise all reference the use of natural gas fuel and good combustion practices. Thus, the technology utilized to meet BACT for PM is identical with the technology proposed for use by KNO for the Waste Heat Boilers. KNO reviewed emission calculations for the Nucor Steel entry for Indiana (RBLC IN-0359) which has the lowest listed BACT limit for PM emissions, and found that PM emissions were based on standard AP-42 emission factors for natural gas combustion. These are the same factors that KNO used to quantify PM emissions from natural gas combustion for the Waste Heat Boilers. Thus, KNO concludes that the most recent PM BACT determinations are consistent with the BACT determination for the Waste Heat Boilers.

For the VOC emission limit of 0.0015 lb/mmBtu for the Lincoln Land Energy Center (RBLC IL-0133), the control technology is identified as “good burner design and good combustion practices”. The Waste Heat Boilers will employ burner design that maximizes fuel efficiency and thus minimizes VOC emissions in addition to good combustion practices. KNO believes that the proposed VOC BACT for the Waste Heat Boilers is consistent with the VOC BACT determination for the Lincoln Land Energy Center since the control technology used to limit emissions is the same for both cases.

- Fire Pumps (Units 65 and 66) – Four (4) new RBLC entries for fire pumps less than 500 horsepower were identified. The BACT limits contained in these permits are no more stringent than limits contained in permits that were reviewed as a part of the BACT analysis submitted with the KNO permit application.

Based on the summary of RBLC listings reviewed, no new permits have been issued since the date of the Construction Permit for KNO that contain BACT control requirements that are more stringent than those reviewed as a part of the BACT determination for KNO. An updated RBLC listing (with new entries since the date of the original permit in March 2021 denoted in red font) is provided as an attachment to this request.

## **Air Quality Impact Analysis**

As a part of its PSD application, KNO provided an air quality impact analysis demonstrating that the project would not result in an ambient impact that exceeded permissible increments under PSD rules, nor would the project cause an exceedance of National Ambient Air Quality Standards (NAAQS). Although EPA guidance does not indicate that the air quality impact analysis must be

revisited as a part of a second request for an extension to a PSD permit, KNO has reevaluated air quality around its site as a part of this request.

KNO reviewed the ADEC web site to identify Construction Permits for major sources that had been issued since the PSD permit was issued to KNO in March 2021. KNO identified two Title I Construction Permits that have been issued since the date of its permit in March 2021, which are:

- Tier 1 Permit issued to the Alaska Gasline Development Corporation on 7 July 2022; and
- Tier 1 Permit issued to Donlin Gold LLC on 1 July 2023.

The air quality implications of each of these permits relative to the KNO facility are discussed below.

#### *Alaska Gasline Development Corporation*

A Tier 1 Construction Permit was issued to Alaska Gasline Development Corporation (AGDC) for a natural gas Liquefaction Plant. The AGDC Liquefaction Plant is proposed to be located just south of the existing KNO facility. Construction has not yet begun on the AGDC Liquefaction Plant; thus the plant has had no impact on existing air quality in the vicinity of KNO. An air quality impact analysis was performed as a part of the permit application prepared by AGDC that included the proposed KNO emission sources. This impact analysis demonstrated that the AGDC Liquefaction Plant, in combination with other existing and proposed sources (including those at KNO) did not adversely impact air quality in the vicinity of KNO. KNO believes that this analysis is sufficient to demonstrate that air quality standards will be met in the vicinity of the plant with both KNO and AGDC's equipment in operation.

#### *Donlin Gold, LLC*

A Tier 1 Construction Permit was issued to Donlin Gold, LLC on 1 July 2023 for a mining project. The proposed Donlin Gold project is located more than 200 miles from the site of KNO, so is not expected to impact the area in the vicinity of KNO.

The region surrounding KNO has experienced little change in population since the PSD permit was issued in March 2021, nor have any significant plant expansions occurred in the area since this time. Because of the fact that there has been no significant growth in the area over the past eighteen months, KNO believes that air quality data collected to characterize the area are still an accurate representation of background air quality.

## Summary

As described in detail above, the extension request is being filed because Nutrien has not been able to secure necessary contracts to ensure that natural gas will be available at the time the plant would wish to begin operations. Nutrien requests that the date by which it must commence construction be extended by 18 months to allow Nutrien to secure necessary contracts prior to commencing construction on modifications necessary. This would extend the date by which construction must commence from 26 March 2024 to 26 September 2025.

If you have any questions regarding this request, please contact Ted Hartman of Nutrien at (913) 302-7469 or Dave Jordan of ERM at (513) 830-9035.

Sincerely,



Fred Werth  
Manager, Kenai Plant

cc: Ted Hartman, Nutrien  
David Jordan, ERM

Enclosure: RBLC Update