AIR QUALITY EFFECTS ANALYSIS
FOR
PERMIT TO CONSTRUCT
ACP-18305 v1.0

Applicant:

1804 Ltd. LLC
10385 Westmoor Drive, Ste 225
Westminster, CO 80021

Facility Location:

Springbrook Gas Plant
5621 – 131st Avenue NW
Williston, ND 58801
SE ¼, SE ¼, Sec. 22, T155N, R100W
Williams County

Introduction and Background

1804 Ltd. LLC (1804 Ltd.) submitted a permit to construct application to the North Dakota Department of Environmental Quality – Division of Air Quality (Department) on June 16, 2025, for the addition of two natural gas-fired compressor engines and removal of one natural gas-fired compressor engine (Project) at the Springbrook Gas Plant (Springbrook Plant or facility) located in Williams County, North Dakota. On September 11, 2025, 1804 Ltd. submitted an additional permit to construct application to obtain a synthetic minor limit on formaldehyde and become an area source of hazardous air pollutants (HAPS).

Additionally, the permit limits represented in pound per hour (lb/hr) were recommended to be administratively revised to the equivalent in grams/hp-hr to be consistent with the regulatory standard(s) for the engines. See Condition 3 of ACP-18305 v1.0.

The Springbrook Plant is a currently synthetic minor prevention of signification deterioration (PSD) source for criteria pollutants and a major source of HAPS. Springbrook Plant consists of ten natural gas-fired engines, three hot oil heaters, two flares, oily water storage tanks and truck unloading equipment. The facility will remain a Title V major source of criteria pollutants and a synthetic minor for PSD with this permit action. The facility will become a synthetic minor source of HAPS with this permit action. The current Title V Permit to Operate No. AOP-28416 v1.1 expires of September 2, 2026. This permit will be incorporated into the renewal.

ACP-18305 v1.0 Table 1-1 lists the new emissions units associated with the Project.

ACP-18305 v1.0 Table 1-2 lists the emissions units that are being removed from the facility.

ACP-18305 v1.0 Table 1-3 lists all emissions units associated with the facility upon Project completion.

Facility Wide Emissions Profile
Potential to Emit (PTE)

Table 1 – PTE [A]

Emission Unit Description	EU	CO	NOx	SO_2	VOCs	PM	Total HAPs	Formaldehyde (Largest HAP)
Caterpillar engine 1,340 bhp	100C	2.33	6.47	0.03	4.27	0.54	1.22	0.70
Caterpillar engine 1,340 bhp	100D	2.33	6.47	0.03	4.27	0.54	1.22	0.70
Caterpillar engine 2,370 bhp	C-2711	4.58	11.44	0.04	14.42	0.75	1.43	0.71
Caterpillar engine 2,370 bhp	C-2712	4.58	11.44	0.04	14.42	0.75	1.43	0.71
Caterpillar engine 1,875 bhp	C-2713	2.90	9.05	0.03	11.41	0.55	1.04	0.51
Caterpillar engine 1,035 bhp	C-300A	1.60	5.00	0.02	4.60	0.33	0.96	0.64
Caterpillar engine 1,035 bhp	C-300B	1.60	5.00	0.02	4.60	0.33	0.96	0.64
Caterpillar engine 1,035 bhp	C-4711	2.10	5.00	0.02	4.60	0.33	1.06	0.75
Caterpillar engine 1,035 bhp	C-5701	2.10	5.00	0.02	4.60	0.33	1.06	0.75
Caterpillar engine 1,035 bhp	C-5702	2.10	5.00	0.02	4.60	0.33	1.06	0.75
Caterpillar engine 1,818 bhp	GEN-1	5.79	17.56	0.03	6.85	0.57	1.26	0.70
Caterpillar engine 1,818 bhp	GEN-2	5.79	17.56	0.03	6.85	0.57	1.26	0.70
Heater 10 x 10^6 Btu/hr	B-940	3.61	4.29	0.03	0.24	0.24	0.08	0.00
Heater 2.5 x 10^6 Btu/hr	B-941	0.90	1.07	0.01	0.06	0.06	0.02	0.00
Heater 1.5 x 10^6 Btu/hr	H-951	0.54	0.64	0.00	0.04	0.04	0.01	0.00

Emission Unit Description	EU	CO	NO_X	SO_2	VOCs	PM	Total HAPs	Formaldehyde (Largest HAP)
Oily water tank with loadout	TK-1	--	--	--	5.73	--	--	--
Emergency and process flare	FL-8501	180.76	39.65	0	36.11	0.04	0.01	0.00
NGL loadout	LOAD1	--	--	--	1.05	--	--	--
Condensate loadout	LOAD2	--	--	--	8.05	--	--	--
Produced water loadout	LOAD3	--	--	--	0.32	--	--	--
Four bullet tanks	V-4401 through V4404	--	--	--	--	--	--	--
Bullet tank	V-4407	--	--	--		--	--	--
Pigging activities	PIG1	--	--	--	13.91	--	--	--
Lift compressor blowdown	LIFTBD	--	--	--	0.01	--	--	--
Compressor blowdown	COMPBD	--	--	--	0.12	--	--	--
Dehydration unit	T-510/V-520	--	--	--	0.14	--	--	--
Fugitive emissions	FUG	--	--	--	--	--	--	--
Fugitives – NSPS OOOO	FUG-1	--	--	--	--	--	--	--
Fugitives – NSPS OOOOa	FUG-2	--	--	--	21.95	--	--	--
Total (without Fugitives):		**223.6**	**150.6**	**0.4**	**151.1**	**6.3**	**14.1**	**8.3**
Total (with Fugitives):		**223.6**	**150.6**	**0.4**	**173.2**	**63**	**14.1**	**8.3**

[A] Abbreviations:
PM: filterable and condensable particulate matter
SO_2: sulfur dioxide
NO_X: oxides of nitrogen
CO: carbon monoxide
VOCs: volatile organic compounds
HAPs: hazardous air pollutants as defined in Section 112(b) of the Clean Air Act

As shown in *Table 1 – PTE* [A], the facility PTE (without fugitives) is below 250 tons per year (tpy) for all criteria air pollutants, below 10 tpy for any single hazardous air pollutant (HAP), and below 25 tpy for the combined HAP emissions. Detailed calculations have been provided in the permit application received on September 11, 2025. The Department has reviewed these calculations and believes they accurately represent the proposed facility operations.

The facility PTE is based on enforceable emissions restrictions put in place on the natural gas-fired engines limiting the allowable amount of NO_X, CO, and VOC. 1804 Ltd. also requested a 9.5 tons per year (tpy) limit for formaldehyde, meaning the facility will become a synthetic minor area source of HAPS. The facility is an existing major Title V source and synthetic minor for PSD and will remain the same for both programs.

Rules Analysis
Potentially Applicable Rules and Expected Compliance Status

A. NDAC 33.1-15-01 – General Provisions:

Multiple topics are included in the General Provisions chapter: entry onto premises - authority, variances, circumvention, severability, land use plans and zoning regulations (only to provide air quality information), measurement of air contaminants, shutdown and malfunction of an installation - requirements for notification, time schedule for compliance, prohibition of air pollution, confidentiality of records, enforcement, and compliance certifications.

Applicability and Expected Compliance

Based on the review of the information provided, the facility will comply with all applicable sections of this rule.

B. NDAC 33.1-15-02 – Ambient Air Quality Standards:

The facility must comply with the North Dakota and Federal Ambient Air Quality Standards (AAQS) and the "Criteria Pollutant Modeling Requirements for a Permit to Construct" guidelines[1].

Applicability and Expected Compliance

The facility is an existing minor source under PSD. The Project emissions increase does not trigger the modeling thresholds listed in the "Criteria Pollutant Modeling Requirements for a Permit to Construct", therefore, preconstruction modeling for this Project was not required. Based on the facility PTE and proposed stack heights, compliance with the ambient air quality standards is expected to be maintained.

C. NDAC 33.1-15-03 – Restriction of Emission of Visible Air Contaminants:

This chapter requires all non-flare sources from new facilities to comply with an opacity limit of 20% except for one six-minute period per hour when 40% opacity is permissible. This chapter also requires facility flares to comply with an opacity limit of 20% except for one six-minute period per hour when 60% opacity is permissible. Lastly, this chapter restricts the opacity of fugitive emissions transported off property to 40% except for one six-minute period per hour when 60% opacity is permissible. This chapter also contains

[1] See October 6, 2014, Criteria Pollutant Modeling Requirements for a Permit to Construct. Available at: https://www.deq.nd.gov/publications/AQ/policy/Modeling/Criteria_Modeling_Memo.pdf

exceptions under certain circumstances and provides the method of measurement to determine compliance with the referenced limits.

Applicability and Expected Compliance

Based on Department experience with Project emission units, compliance with the 20% opacity limit is expected.

D. NDAC 33.1-15-04 – Open Burning:

No person may dispose of refuse and other combustible material by open burning, or cause, allow, or permit open burning of refuse and other combustible material, except as provided for in Section 33.1-15-04-02 or 33.1-15-10-02, and no person may conduct, cause, or permit the conduct of a salvage operation by open burning.

Applicability and Expected Compliance

The facility is subject to this chapter and will comply with all open burning regulations.

E. NDAC 33.1-15-05 – Emissions of Particulates Matter Restricted:

This chapter establishes particulate matter emission limits and restrictions for industrial process equipment and fuel burning equipment used for indirect heating.

Applicability and Expected Compliance

The Project compressor engines are fired on natural gas and are expected to emit particulate matter emissions that are well below the allowable levels established by this chapter.

F. NDAC 33.1-15-06 – Emissions of Sulfur Compounds Restricted:

This chapter applies to any installation in which fuel is burned and the SO_2 emissions are substantially due to the sulfur content of the fuel; and in which the fuel is burned primarily to produce heat. This chapter is not applicable to installations which are subject to an SO_2 emission limit under Chapter 33.1-15-12, Standards for Performance for New Stationary Sources, or installations which burn pipeline quality natural gas.

Applicability and Expected Compliance

The Project compressor engines are exempt from this chapter since the engines (EUs 100C & 100D) will be fired on gas containing no more than 2 grains of sulfur per 100 standard cubic feet.

G. NDAC 33.1-15-07 – Control of Organic Compounds Emissions:

This chapter establishes requirements for the construction of organic compound facilities and the disposal of organic compounds gas and vapor generated as waste resulting from storage, refining, or processing operations at the facility.

Applicability and Expected Compliance

The Project will not alter the applicability, and the facility will continue to operate in full compliance with the regulatory requirements.

H. NDAC 33.1-15-08 – Control of Air Pollution from Vehicles and Other Internal Combustion Engines:

This chapter restricts the operation of internal combustion engines which emit from any source unreasonable and excessive smoke, obnoxious or noxious gas, fumes or vapor. This chapter also prohibits the removal or disabling of motor vehicle pollution control devices.

Applicability and Expected Compliance

The Project compressor engines (EUs 100C & 100D) are also subject to opacity requirements under NDAC 33.1-15-03-02 and subject to the requirements of NSPS Subpart JJJJ. As a result of expected compliance with these provisions, the engine is not expected to emit any unreasonable and excessive smoke, obnoxious or noxious gases, fumes, or vapor.

I. NDAC 33.1-15-09 – [repealed]

J. NDAC 33.1-15-10 – Control of Pesticides:

This chapter provides restrictions on pesticide use and restrictions on the disposal of surplus pesticides and empty pesticide containers.

Applicability and Expected Compliance

The facility is subject to this chapter and is expected to comply with all applicable requirements should pesticides be used.

K. NDAC 33.1-15-11 – Prevention of Air Pollution Emergency Episodes:

When an air pollution emergency episode is declared by the Department, the facility shall comply with the requirements in Chapter 33.1-15-11 of the North Dakota Air Pollution Control (NDAPC) rules.

L. NDAC 33.1-15-12 – Standards of Performance for New Stationary Sources [40 Code of Federal Regulations Part 60 (40 CFR Part 60)]:

This chapter adopts most of the Standards of Performance for New Stationary Sources (NSPS) under 40 CFR Part 60. The Springbrook Plant is subject to the following subparts under 40 CFR Part 60 which have been adopted by North Dakota as of July 1, 2019:

Subpart A – General Provisions

Subpart A contains general requirements for plan reviews, notification, recordkeeping, performance tests, reporting, monitoring and general control device requirements.

Applicability and Expected Compliance

The facility will comply with the general provisions of Subpart A through submission of timely notifications, performance testing, reporting, and following the general control device and work practice requirements under Subpart A. In addition, any changes to the facility after it is built will be evaluated with respect to this subpart as well as others.

Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

Subpart JJJJ establishes emissions standards (NO_X, CO, VOC) and compliance schedules for all new, modified and reconstructed stationary spark ignition (SI) internal combustion engines (ICE) and equipment manufactured on or after July 1, 2007, regardless of size. The subpart applies to manufactures, owners, and operators of such engines and equipment. SI ICE are categorized in this subpart by usage, size and fuel type.

Applicability and Expected Compliance

The Project natural gas compressor engines (EUs 100C & 100D) are subject to the requirements of NSPS Subpart JJJJ. The engines are rated at 1,340 brake horsepower (bhp), were constructed in 2006, and will be equipped with an air to fuel ratio control (AFRC) and oxidation catalyst.

Subpart JJJJ requires the engine to comply with the following emissions standards:

- NOx of 1.0 g/hp-hr or 82 ppmvd @ 15% O_2
- CO of 2.0 g/hp-hr or 270 ppmvd @ 15% O_2
- VOC of 0.7 g/hp-hr or 60 ppmvd @ 15% O_2

Beyond the Subpart JJJJ limits, the engines (EUs 100C & 100D) are restricted to lower engine emissions limits to avoid major source thresholds under PSD. As a result, Table 3-1 of ACP-18305 v1.0 established the following limits:

- NOx of 0.50 g/hp-hr
- CO of 0.18 g/hp-hr
- VOC of 0.33 g/hp-hr

To demonstrate compliance with the above limits, the facility must conduct emissions testing every 8,760 hours of operations or every three years, whichever comes first.

The facility is also expected to comply with Subpart JJJJ requirements by properly maintaining and operating an air-to-fuel ratio controller and keeping a maintenance plan and records of conducted maintenance and, to the extent practicable, will maintain and operate the engines in a manner consistent with good air pollution control for minimizing emissions.

M. NDAC 33.1-15-13 – Emission Standards for Hazardous Air Pollutants [40 Code of Federal Regulations Part 61 (40 CFR Part 61)]:

This chapter discusses emission standards for hazardous air pollutants. It specifically incorporates a majority of the subparts and appendices of the National Emission Standards for Hazardous Air Pollutants (NESHAP) under 40 CFR Part 61 as of July 2, 2010.

Applicability and Expected Compliance

The facility does not appear to have any applicable requirements under this chapter.

N. NDAC 33.1-15-14 – Designated Air Contaminant Sources, Permit to Construct, Minor Source Permit to Operate, Title V Permit to Operate:

This chapter designates that federally regulated sources are required to obtain a Permit to Construct and a Permit to Operate and comply with specific emission control and air quality standards.

Applicability and Expected Compliance

The facility has submitted an application for a permit to construct and has met all requirements necessary to obtain a permit to construct. The facility is currently a Title V major source and synthetic minor PSD source and will remain as such with this permit action. The facility will become an area source of HAPS via a federally enforceable restriction limiting formaldehyde to 9.5 tpy or less.

The permit must undergo public comment per NDAC 33.1-15-14-06.5.a.

Once the construction of the Project is completed and the permit to construct requirements have been met, a facility inspection will be performed by the Department. Pending a satisfactory facility inspection, this permit to construct will be incorporated into the permit to operate.

O. NDAC 33.1-15-15 – Prevention of Significant Deterioration of Air Quality [40 CFR 52.21]:

This chapter adopts the federal provisions of the Prevention of Significant Deterioration of air quality (PSD) program (40 CFR 52.21). A facility is subject to PSD review if it is classified as a "major stationary source" under Chapter 33.1-15-15.

Applicability and Expected Compliance

This facility is not classified as a "major stationary source" under 40 CFR 52.21(b)(1)(i)(a) and is therefore only subject to PSD review if emissions of a regulated new source review (NSR) pollutant[2] exceed 250 tpy (excluding fugitive emissions). The PTE for this facility,

[2] See 40 CFR 52.21(b)(50). Available at: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-52/subpart-A/section-52.21#p-52.21(b)(50)

as shown in Table 1 – *PTE* [A], is below the 250 tpy threshold and therefore not subject to PSD review.

P. NDAC 33.1-15-16 – Restriction of Odorous Air Contaminants:

This chapter restricts the discharge of objectionable odorous air contaminants which measures seven odor concentration units or greater outside the property boundary. The emission of hydrogen sulfide is also addressed with strict concentration limitations. The chapter also establishes the method of measurement using certified inspectors, scentometers, and other approved instruments.

Applicability and Expected Compliance

Based on Department experience with sources having similar emission units, processes, and low hydrogen sulfide concentrations, the facility is expected to comply with this chapter.

Q. NDAC 33.1-15-17 – Restriction of Fugitive Emissions:

This Chapter restricts fugitive emissions from particulate matter or other visible air contaminants and gaseous emissions that would violate Chapter 2 (ambient air quality standards), Chapter 15 (PSD), Chapter 16 (odor), or Chapter 19 (visibility).

Applicability and Expected Compliance

The facility will be required to take reasonable precautions to prevent fugitive emissions in violation of the above referenced NDAC chapters.

R. NDAC 33.1-15-18 – Stack Heights:

This chapter restricts the use of stack heights above good engineering practices (GEP). The chapter primarily adopts federal regulations listed under 40 CFR 51.100(ii). This chapter also restricts the use of dispersion techniques to affect the concentration of a pollutant in the ambient air. Demonstrations of good engineering practice stack heights must be made available for review.

Applicability and Expected Compliance

The proposed stacks for the Project do not exceed GEP and will not use dispersion techniques to affect the pollutant concentration in the ambient air.

The stack heights for the Project are listed in the following table:

Table 2 – Stack Height

Emission Unit	EU	EP	Stack Height (Feet)
Caterpillar engine	100C	100C	20.8
Caterpillar engine	100D	100D	20.8

S. NDAC 33.1-15-19 – Visibility Protection:

This chapter outlines regulations regarding visibility protection and applies to new major stationary sources as defined in Section 33.1-15-15-01. It contains provisions regarding visibility impact analysis, visibility models, notification requirements for permit applications, review by federal land managers, permit issuance criteria, and visibility monitoring.

Applicability and Expected Compliance

The facility is not a new major stationary source and therefore is not subject to the requirements of this chapter. Given the minor increases of the visibility impairing air pollutants, such as NO_X, SO_2, and $PM_{2.5}$, it is expected that the facility will not adversely contribute to visibility impairment within the three units of the Theodore Roosevelt National Park (nearest federal Class I areas) or at the Lostwood National Wildlife Refuge.

T. NDAC 33.1-15-20 – Control of Emissions from Oil and Gas Well Production Facilities:

The facility is not an oil or gas well facility and is therefore not subject to the requirements of this chapter.

U. NDAC 33.1-15-21 – Acid Rain Program:

This chapter adopts the acid rain provisions of the Clean Air Act specified under 40 CFR Parts 72-78. The facility is not subject to the acid rain provision as they are not an electric utility.

V. NDAC 33.1-15-22 – Emissions Standards for Hazardous Air Pollutants for Source Categories [40 Code of Federal Regulations Part 63 (40 CFR Part 63)]:

This chapter adopts most of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories under 40 CFR Part 63. These standards typically apply to major sources of air pollution that are in a regulated source category. In addition to the major source requirements, some of the regulations have "area source" standards (for non-major sources). Some of the area source standards have not been adopted by the Department and compliance will be determined by the United States Environmental Protection Agency (USEPA) (i.e. 40 CFR 63, Subpart ZZZZ area source provisions have not been adopted by the Department).

Applicability

The facility's potential HAP emissions are limited with this permit action to less than 10 tons/year of any single HAP and are less than 25 tons/year of any combination of HAPs, so the facility becomes an area (minor) source of HAPs. As shown in Table 1 – *PTE* [A], total potential HAPs from the facility are approximately 13.9 tons/year. The greatest single potential HAP is formaldehyde and is limited at 9.5 tpy or less.

Subpart A – General Provisions

Subpart A contains general requirements for prohibited activities and circumvention, preconstruction review and notification, standards and maintenance requirements, performance tests, monitoring, recordkeeping, reporting, and control device work practice requirements.

Applicability and Expected Compliance

The facility will comply with the general provisions of Subpart A through submission of timely notifications, performance testing, monitoring, recordkeeping, reporting, and following the control device work practice requirements under Subpart A.

Subpart HH – National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities

Subpart HH applies to major HAP sources that operate ethylene glycol or diethylene glycol dehydrators and area and major sources that operate triethylene glycol (TEG) dehydrators. With this permit action the facility changes classification from a major source to an area source. The facility does not operate a TEG dehydrator and is therefore no longer subject to this subpart.

Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emissions from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

Applicability and Expected Compliance

The natural gas compressor engines (EUs 100C & 100D) are subject to the requirements under this subpart. The requirements of Subpart ZZZZ for the engines are met by complying with the requirements of NDAC 33.1-15-12 [40 CFR 60], Subpart JJJJ.

W. NDAC 33.1-15-23 – Fees:

This chapter requires a filing fee of $325 for permit to construct applications, plus any additional fees based on actual processing costs. The additional fees based on processing costs will be assessed upon issuance of the draft permit to construct. The annual operating permit fee is also applicable.

The applicant has paid the $325 filing fee and may be required to pay the additional fees associated with the permit processing.

X. NDAC 33.1-15-24 – Standards for Lead-Based Paint Activities:

The facility will not perform any lead-based painting and is therefore not subject to this chapter.

Y. NDAC 33.1-15-25 – Regional Haze Requirements:

This chapter is specific to existing stationary sources or groups of sources which have the potential to "contribute to visibility impairment" as defined in Section 33.1-15-25-01.2. Existing stationary sources or groups of sources determined to contribute to visibility impairment may be required to implement emissions reduction measures to help the Department make reasonable progress toward North Dakota's reasonable progress goals established in accordance with 40 CFR 51.308.

Applicability and Expected Compliance

The facility is an existing major source but based on the minor increases of visibility impairment pollutants, the facility is not expected to contribute to visibility impairment. Therefore, the facility is not subject to the requirements of this chapter.

Summary:

A complete review of the proposed Project indicates that the facility is expected to comply with the applicable federal and state air pollution rules and regulations. The Department will make a final recommendation on the issuance of a Permit to Construct for the Springbrook Gas Plant following completion of a 30-day public comment period. The public comment period will run from February 21, 2026, through March 22, 2026.

Update post comment period:
[Reserved]

Date of Draft Analysis: February 11, 2026
Date of Final Analysis: [Reserved]

Analysis By:

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KMT:tas