Air Quality Operating Permit Application
Form 3.0: Pollutant Emissions Summary

INSTRUCTIONS:
Section 3.1-3.2: Emissions Summary and Determination of Operating Class

IMPORTANT: Please type or print with black ink. Do NOT use pencil. If you have questions, please contact the Nebraska Department of Environment and Energy (NDEE), Air Quality Operating Permit Section, at (402) 471-2186 or NDEE.AirQuality.nebraska.gov.

You must indicate the class of your source on Form 1.0, Section 1.2. If this is your source's initial operating permit and you aren't sure what classification applies to your source, answer the questions in Form 3.0, Section 3.2, and submit the completed form as part of your operating permit application package. If you are renewing an operating permit and wish to change the class or status of your source, you must also answer the questions and submit the form as part of your application package.

DEFINITIONS, ACRONYMS, AND ABBREVIATIONS:

You will find the following definitions helpful as you work through Form 3.0, Section 3.1-3.2.

Actual Emissions – the actual rate of emissions of an air pollutant from the source (a detailed definition can be found in Title 129, Chapter 1).

Carbon dioxide equivalents (CO_2e) – an amount of greenhouse gases (GHGs) emitted. CO_2e are computed by the sum total of multiplying the mass amount of emissions, in tons per year (tpy), for each of the six greenhouse gases in the pollutant GHGs, by each of the gas's associated global warming potential (see definitions for Greenhouse Gases and Global Warming Potential).

Fugitive Emissions: Emissions that cannot reasonably pass through a stack, vent, chimney, or other opening with a similar function

Greenhouse Gases (GHGs) – the air pollutant defined as the aggregate group of six pollutant greenhouse gases, which are carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride(SF_6).

Greenhouse Warming Potential (GWP) – the ratio of the time-integrated radiative forcing from the instantaneous release of one kilogram of a trace substance relative to that of one kilogram- of a reference gas, i.e., CO_2. The pollutant greenhouse gases (GHGs) are adjusted to calculate CO_2 equivalence using GWPs, which are listed in Table 1 below or can be found in 40 CFR 98, Subpart A, Table A-1, as published at 79 Federal Register 73779 on December 11, 2014.

HAP – Hazardous Air Pollutant.

Legal Name – the source name registered with the Nebraska Secretary of State's Office.

Potential Emissions or Potential to Emit (PTE) – maximum capacity of a source to emit a pollutant based on its physical and operational design. Any federally enforceable physical or operational limitation on the capacity of the source to emit one or more pollutants, such as air pollution control equipment, restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, is considered part of the source design.

Source – the manufacturing plant, processing operation, power plant, or other source of air pollutant emissions that is physically located in Nebraska. For purposes of the application and permitting process, the source is the collection of all air pollutant emission points and/or units, including control equipment, located at the source of air pollutant emissions.

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ITEMS THAT MUST BE CONSIDERED WHEN DETERMINING THE CLASS OF YOUR SOURCE:

Your first step in determining the class of your source is calculation of potential and actual emissions from all emission points at your source, as done in Section 3.1. Fugitive emissions are included in the calculation of potential and actual emissions if your source belongs to one or more of the source categories listed in Title 129, Chapter 1, Section 002.56, or any other stationary source category that is being regulated by a standard promulgated under Section 111 or 112 of the Federal Clean Air Act as of August 7, 1980.

You may choose to take a federally enforceable permit limitation so that air pollutant emissions from your source are less than those of a major source (as defined in Title 129, Chapter 1, Section 002.56). For example, accepting a limit on emissions of one or more pollutants, setting a limit on hours of source operation, limiting annual production, or agreeing to install and operate control equipment can be federally enforceable permit limitations. These limitations must be identified in the operating permit application and included in your emissions calculations.

You have the option of applying for a Class I operating permit for your source even if the actual air emissions are less than the Class I thresholds listed below. A Class I operating permit gives a source increased operational/production flexibility because the source is not limited by the Class I thresholds. However, if you opt for a Class I operating permit your source must pay annual emission fees even if the actual emissions do not exceed the Class I thresholds.

Class I thresholds:

- Five (5) tons/year of lead
- Ten (10) tons/year of any single hazardous air pollutant (other than lead)
- Twenty-Five (25) tons/year of any combination of HAPs
- One-hundred (100) tons/year of any other regulated air pollutant

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Table 1 — Global Warming Potentials

[100-Year Time Horizon]

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
Carbon dioxide	124–38–9	CO2	1
Methane	74–82–8	CH4	25
Nitrous oxide	10024–97–2	N2O	298
HFC–23	75–46–7	CHF3	11,700
HFC–32	75–10–5	CH2F2	650
HFC–41	593–53–3	CH3F	150
HFC–125	354–33–6	C2HF5	2,800
HFC–134	359–35–3	C2H2F4	1,000
HFC–134a	811–97–2	CH2FCF3	1,4300
HFC–143	430–66–0	C2H3F3	300
HFC–143a	420–46–2	C2H3F3	3,800
HFC–152	624–72–6	CH2FCH2F	53
HFC–152a	75–37–6	CH3CHF2	140
HFC–161	353–36–6	CH3CH2F	12
HFC–227ea	431–89–0	C3HF7	2,900
HFC–236cb	677–56–5	CH2FCF2CF3	1,340
HFC–236ea	431–63–0	CHF2CHFCF3	1,370
HFC–236fa	690–39–1	C3H2F6	6,300
HFC–245ca	679–86–7	C3H3F5	560
HFC–245fa	460–73–1	CHF2CH2CF3	1,030

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Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
HFC–365mfc	406–58–6	CH3CF2CH2CF3	794
HFC–43–10mee	138495–42–8	CF3CFHCFHCF2CF3	1,300
Sulfur hexafluoride	2551–62–4	SF6	23,900
Trifluoromethyl sulphur pentafluoride	373–80–8	SF5CF3	17,700
Nitrogen trifluoride	7783–54–2	NF3	17,200
PFC–14 (Perfluoromethane)	75–73–0	CF4	6,500
PFC–116 (Perfluoroethane)	76–16–4	C2F6	9,200
PFC–218 (Perfluoropropane)	76–19–7	C3F8	7,000
Perfluorocyclopropane	931–91–9	C-C3F6	17,340
PFC–3–1–10 (Perfluorobutane)	355–25–9	C4F10	7,000
Perfluorocyclobutane	115–25–3	C-C4F8	8,700
PFC–4–1–12 (Perfluoropentane)	678–26–2	C5F12	7,500
PFC–5–1–14 (Perfluorohexane)	355–42–0	C6F14	7,400
PFC–9–1–18	306–94–5	C10F18	7,500
HCFE–235da2 (Isoflurane)	26675–46–7	CHF2OCHClCF3	350
HFE–43–10pccc (H–Galden 1040x)	E1730133	CHF2OCF2OC2F4OCHF2	1,870
HFE–125	3822–68–2	CHF2OCF3	14,900
HFE–134	1691–17–4	CHF2OCHF2	6,320
HFE–143a	421–14–7	CH3OCF3	756
HFE–227ea	2356–62–9	CF3CHFOCF3	1,540
HFE–236ca12 (HG–10)	78522–47–1	CHF2OCF2OCHF2	2,800
HFE–236ea2 (Desflurane)	57041–67–5	CHF2OCHFCF3	989

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Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
HFE–236fa	20193–67–3	CF3CH2OCF3	487
HFE–245cb2	22410–44–2	CH3OCF2CF3	708
HFE–245fa1	84011–15–4	CHF2CH2OCF3	286
HFE–245fa2	1885–48–9	CHF2OCH2CF3	659
HFE–254cb2	425–88–7	CH3OCF2CHF2	359
HFE–263fb2	460–43–5	CF3CH2OCH3	11
HFE–329mcc2	67490–36–2	CF3CF2OCF2CHF2	919
HFE–338mcf2	156053–88–2	CF3CF2OCH2CF3	552
HFE–338pcc13 (HG–01)	188690–78–0	CHF2OCF2CF2OCHF2	1,500
HFE–347mcc3	28523–86–6	CH3OCF2CF2CF3	575
HFE–347mcf2	E1730135	CF3CF2OCH2CHF2	374
HFE–347pcf2	406–78–0	CHF2CF2OCH2CF3	580
HFE–356mec3	382–34–3	CH3OCF2CHFCF3	101
HFE–356pcc3	160620–20–2	CH3OCF2CF2CHF2	110
HFE–356pcf2	E1730137	CHF2CH2OCF2CHF2	265
HFE–356pcf3	35042–99–0	CHF2OCH2CF2CHF2	502
HFE–365mcf3	378–16–5	CF3CF2CH2OCH3	11
HFE–374pc2	512–51–6	CH3CH2OCF2CHF2	557
HFE–449sl (HFE–7100) Chemical blend	163702–07–6 163702–08–7	C4F9OCH3 (CF3)2CFCF2OCH3	297
HFE–569sf2 (HFE–7200) Chemical blend	163702–05–4 163702–06–5	C4F9OC2H5 (CF3)2CFCF2OC2H5	59
Sevoflurane	28523–86–6	CH2FOCH(CF3)2	345

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Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
HFE–356mm1	13171–18–1	(CF3)2CHOCH3	27
HFE–338mmz1	26103–08–2	CHF2OCH(CF3)2	380
(Octafluorotetramethy-lene)hydroxymethyl group	NA	X-(CF2)4CH(OH)-X	73
HFE–347mmy1	22052–84–2	CH3OCF(CF3)2	343
Bis(trifluoromethyl)-methanol	920–66–1	(CF3)2CHOH	195
2,2,3,3,3-pentafluoropropanol	422–05–9	CF3CF2CH2OH	42
PFPMIE	NA	CF3OCF(CF3)CF2OCF2OCF3	10,300