



Nebraska Department of Environmental Quality

Air Quality Permitting

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Permitting Hotline: 1-877-834-0474

Procrastinate



- Air Quality Construction Permits
 - Allow construction of the “emission units” (generator engines, flares, etc.)
 - Must be obtained **prior** to initiating construction activities
 - Site specific permit (one permit per location)
- Typically takes 75 – 120 days after submitting application to be issued
 - Includes a 30-day public comment period
 - Site-by-Site evaluation, permits go through several stages of drafting, reviews, and approvals before notice is placed in the newspaper.

Purpose of AQ Permit?

- Protect Nebraska Ambient Air Quality Standards (NAAQS)
 - Title 129 – Nebraska Air Quality Regulations, Chapter 4
 - Requires evaluation of projects with the potential to significantly impact local air quality, Chapter 17
 - CH₄ currently not “regulated pollutant”, products of combustion are
- Construction Permits vs. Operating Permits
 - CP allows construction and operation
 - OP application may be required after 12 mo of operation
 - Whether you need to apply for an OP based on actual and potential emissions
 - Class I (Title V) or Class II (Minor source)
 - No OP required if you don't need a CP (exception: multiple projects)
- Help ensure compliance with NSPS (JJJJ) or NESHAP standards

Do I Need A Construction Permit?

- Permit applicability based on source's "Potential To Emit" (PTE)
 - NO_x and CO usually the highest pollutants from engines/flares and trigger whether a construction permit is required
 - Other pollutants include SO_x, VOC, H₂S, PM, less likely to trigger
 - Approximate size of NPR installation:
 - < 2.0 MMBtu/hr total biogas; < 250 kW; < 400 HP
 - Small projects → less than Chapter 17 thresholds → not likely to have a significant impact on AQ
 - Chapter 17 Thresholds: 40 tpy NO_x / SO_x; 50 tpy CO; 15 tpy PM
- **FIRST STEP:** system size → biogas production qty → qty & size of engines/flare;
- **SECOND STEP** – calculate maximum PTE using worst-case conditions and continuous operation (8,760 hr/yr)
 - Compare to Chapter 17 permit thresholds
 - Many manufacturers have emissions data available for NO_x & CO
NO_x = 2-20 g/hp-hr; CO=2-10 g/hp-hr;

Example PTE Calculation

Biogas Engine-Driven Generator (~400 hp / 250 kW)					
Fuel: <u>Biogas @600 btu/scf</u>			Fuel Input:	4,000	scf/hr
				2.40	MMBtu/hr
Pollutant	Emission Factor (lb/MMBtu)	Emission Factor Source	Emission Rate (lb/hr)	Emissions (ton/yr)	Chap. 17 Threshold (ton/yr)
PM	0.048	Table 3.2-1	0.12	0.51	n/a
PM ₁₀	0.048	Table 3.2-1	0.12	0.50	15
SO _x	0.80	H ₂ S in Biogas	1.920	8.41	40
NO_x	4.08	Table 3.2-2	9.79	42.89	40
CO	3.72	Table 3.2-3	8.93	39.10	50
VOC	0.12	Table 3.2-1	0.29	1.26	40
H ₂ S	0.05	H ₂ S in Biogas	0.12	0.53	n/a
Individual HAP (formaldehyde)	0.055	Table 3.2-1	0.13	0.58	2.5
Total HAPs	0.08	Table 3.2-1	0.19	0.84	10

Using worst-case emission factors from AP-42 Tables for 2-stroke LB, 4-stroke LB, and 4-stroke RB (07/00)

Do I Need A Construction Permit?

- **NO**
 - See guidance document titled “Recordkeeping for No Permit Required”
 - Keep DEQ updated with any changes/additions to the system
- **YES**
- Fill out application and submit as early as possible.
 - No P.E. is required, “Responsible Official” must sign application
- Consultants can make process smoother/save time, but not required.
 - List of consultants on website → search: “environmental consultants”
- All forms & instructions available on website
 - Form CS – Coversheet & Checklist
 - Form 1.0 – General Information, Project Description, Site Layout
 - Form 2.0 – Modeling Information (stack parameters, locations, etc.)
 - Form 3.0 – Emissions Summary
 - Form 6.0, Section 6.2 – Internal Combustion Units
 - Call Permit Hotline for assistance 1-877-834-0474
- Application fee (\$250-\$3,000) based on total PTE

Construction Permit Application Fee

Potential to Emit (PTE):	Fee
NO _x , SO _x , CO, VOC, PM ₁₀ < 50 tons/yr each HAP < 2.5 tons/yr single, <10 tons/yr total	\$250
PTE between 50 and 100 tons/yr PTE HAPs between 2.5 and 10 tons/yr single, between 10 and 25 tons/yr total	\$1,500
PTE greater than 100 tons/yr each PTE HAPs greater than 10 tons/yr single, greater than 25 tons/yr total	\$3,000

Permitting/Assistance Contacts

- **Air Quality Division:**

- Brad Reid – brad.reid@nebraska.gov (402) 471-4159
- Clark Smith – clark.smith@nebraska.gov (402) 471-4204
- **Air Permit Hotline** – 1-877-834-0474

- **Water Quality Division:**

- **Livestock Permits** – Dennis Heitmann – dennis.heitmann@nebraska.gov (402) 471-4288
- **Construction Permit** – Chuck Duerschner – charles.duerschner@nebraska.gov (402) 471-4206
- **National Pollution Discharge Elimination Permits** – Donna Garden – donna.garden@nebraska.gov (402) 471- 1367

- **Waste Management Division:**

- Permits and Compliance – Bill Gidley – bill.gidley@nebraska.gov (402) 471- 4495

- **One-Stop Permit Assistance**

- First Steps/General Assistance – Hugh Stirts – hugh.stirts@nebraska.gov (402) 471-8697