



**Fact Sheet:** Anaerobic Digester Air Permit Application

**Date:** February 6, 2020

The Southwest Ohio Air Quality Agency received an initial installation permit application for an anaerobic digester with flare and a small natural gas boiler from Synthica Energy, LLC. The complete application was received on January 22, 2020. The subsequent permits will regulate air emissions from the anaerobic digester and boiler. The site for this project is 5410 Vine Street, St. Bernard, Ohio. An Initial Installation Permit to Install/Operate (PTIO) for the small natural gas boiler was issued final by Ohio EPA on January 27, 2020. An Initial Installation PTIO for the anaerobic digester with flare was issued in draft on January 31, 2020. The Southwest Ohio Air Quality Agency and Ohio EPA will be [accepting comments on the draft PTIO](#) through March 6, 2020.



### Project Overview

Synthica Energy, LLC plans on installing an anaerobic digestion facility to convert organic wastes in the Cincinnati area to renewable natural gas. Organic wastes from nearby industrial and food manufacturing facilities will be converted to biogas, a renewable product composed of 60-65% methane, 35-40% carbon dioxide, and trace contaminants such as hydrogen sulfide (H<sub>2</sub>S) and siloxanes. The majority of the plant biogas will be sent to a biogas cleanup system. The biogas treatment train consists of hydrogen sulfide removal, siloxane removal, and carbon dioxide removal. The resulting product is renewable natural gas (RNG) composed of approximately 98-100% methane and 0-2% carbon dioxide. The RNG will be compressed and injected into the local natural gas grid for final sale.

In the rare scenario (less than 4% operating time on average) that the biogas treatment and compression system is out of operation, raw biogas will be sent to an emergency flare. The emergency flare will provide complete combustion of biogas to prevent methane emissions to the air. Preliminary calculations show that the annual emissions from this source will be <6 tons per year (TPY) of Carbon Monoxide; <0.35 TPY Nitrogen Oxides; <0.15 TPY particulate emissions; and <0.72 TPY Sulfur Dioxide.

A small natural gas boiler (10 mmBtu/hr) with minimal air emissions will also be installed to generate process heat.

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