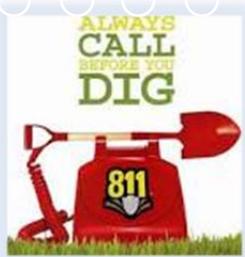


PIPELINE SAFETY

DID YOU KNOW?

One of the leading causes of pipeline failures is from someone damaging the pipeline when they're digging near it. We watch for unauthorized digging, but we're also asking for your help.



All states have established one-call notification centers and require by law that you call 48 to 72 hours before digging. Simply dial **811** to reach the one-call center in our area to

ensure your safety. The one-call center will notify the City of Midland and owners of other buried utilities so they can mark their underground facilities in the area before digging begins. Once these facilities are marked, you'll "know what's below" and can dig safely.

For more information on digging and damage prevention, visit www.missdig.net.



City of Midland
333 West Ellsworth Street
Midland, Michigan 48640

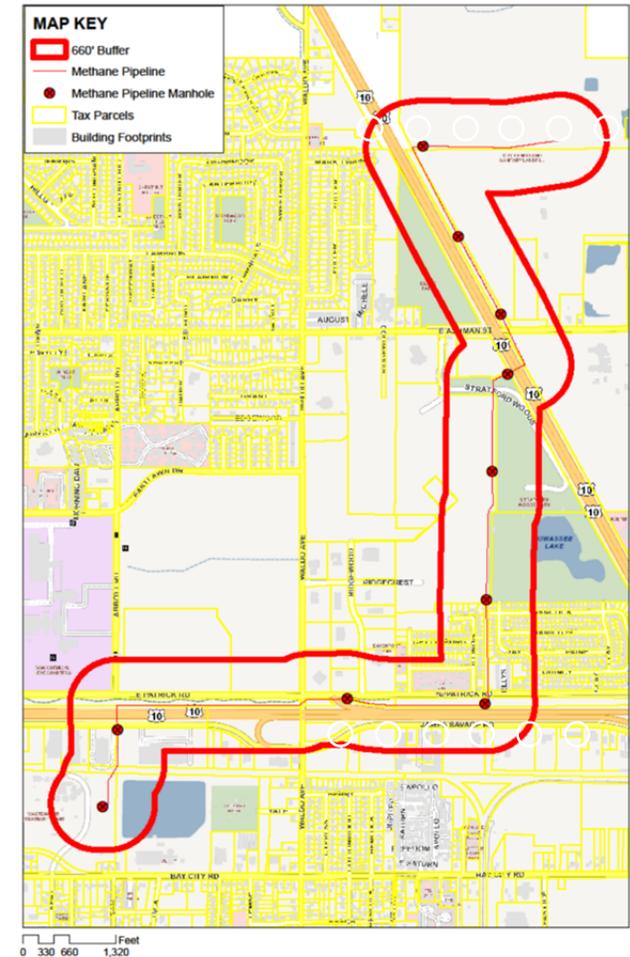
Phone (989) 837-3500
<http://www.midland-mi.org>



The City of Midland landfill gas is a renewable resource! That's an important distinction as we tackle the dual challenge of meeting increased energy demand while reducing our carbon footprint.

Pipeline Safety

What you need to know



This information is provided to those individuals living and/or working near the City of Midland Landfill Gas Pipeline. The brochure has been designed to provide you basic information regarding pipelines and how to recognize leaks and how to respond in the event of a pipeline emergency.

What the City of Midland Does If an Emergency Occurs

The City of Midland Department of Utilities facilities are designed to isolate the landfill gas pipeline in the event of an emergency. We have developed a comprehensive Emergency Response Plan to assure an effective response to pipeline emergencies. Our personnel are trained to work in cooperation with emergency responders to manage these events.

Pipeline Location and Markers



Pipeline markers like these are used to indicate the approximate location of the landfill gas pipeline and to provide contact information. Markers should never be removed or relocated by anyone other than a pipeline operator.

Pipeline maps and markers provide the general location of the pipeline, but are NOT an alternative to calling one-call before excavating. If you plan to do some digging, always call **811** before you dig.

Signs of a Pipeline Leak

Any one of the following could be a sign of a potential pipeline leak:

- ✓ A blowing or hissing sound
- ✓ Gaseous or “rotten egg” odor
- ✓ Flames, if a leak has ignited
- ✓ Dead or discolored vegetation in an otherwise green area
- ✓ Dust blowing from a hole in the ground
- ✓ Continuous bubbling in wet or flooded areas

If you notice any of these signs, near the City of Midland Landfill Gas Pipeline leave the area and call us immediately at (989) 837-3500.

Properties of Landfill Gas (LFG)

- ✓ LFG is generated during the decomposition of organic material contained in municipal solid waste (MSW) landfills.
- ✓ Composition - LFG is about 50% methane and 50% carbon dioxide and water vapor. It also contains small amounts of nitrogen, oxygen, and hydrogen, less than 1% non-methane organic compounds (NMOCs), and trace amounts of inorganic compounds.
- ✓ Lighter than Air – Methane is 40% lighter than air, but some gases, such as carbon dioxide and hydrogen sulfide (H₂S) are denser than air and will collect in subsurface areas, such as trenches and manholes.
- ✓ Hazardous/Flammable – 5 -17 % gas-to-air mix is the flammable range.
- ✓ Combustion Products – No significant harmful compounds result from natural gas combustion. However, incomplete combustion may produce carbon monoxide.
- ✓ Ignition Temperature – The ignition temperature is nearly 1100 °F. Static electricity, pilot lights, matches, and sparks from telephones, electric motors, and internal combustion engines can easily reach this temperature.
- ✓ Asphyxiant – Landfill gas can displace oxygen in an enclosed space, resulting in the potential for suffocation.
- ✓ Odor – while methane is odorless, landfill gas contains compounds that have strong, pungent odors (for example, H₂S at tiny concentrations (< 1 PPM) has the smell of rotten eggs).

Sour Gas – High Concentration of H₂S

- ✓ There are serious health problems associated with Sour Gas. Exposure to low concentrations can cause eye and throat injury. Exposure to high concentrations is immediately dangerous to life and health.
- ✓ DO NOT rely on your sense of smell to indicate the continuing presence of hydrogen sulfide or to warn of harmful levels. After a while, you lose the ability to smell the gas even though it is still present. This loss of smell can happen very rapidly and at high concentrations the ability to smell the gas can be lost instantly.

Midland Gas to Energy

The City of Midland operates about 3.4 miles of landfill gas trans-mission pipeline.

We monitor our pipeline in many ways, including round-the-clock electronic monitoring, regular ground surveillance, and during routine operation and maintenance. We work hard to maintain the integrity of our pipeline system and keep it safe from security threats. We stay in touch with industry and government organizations to monitor potential threats and study new technologies that will help keep our facilities as safe and secure as possible. Neighbors like you can help us to maintain a safe, secure and reliable gas to energy system.



Report unusual or suspicious activity near our pipeline facilities, and, in the unlikely event of an emergency, please call us immediately

Phone (989) 837-3500