

# Biogas Analysis Services

Laboratory Analysis | Sampling Equipment & Supplies | On-site Sampling

Ohio Lumex is a leading source for comprehensive Biogas Analysis Services, including lab analysis and on-site sampling of waste-to-energy, landfill gas, wastewater, and other renewable energy projects. Our Accredited Laboratory offers an all-inclusive range of biogas analysis services performed according to industry methods and standards, including ASTM, ISO, EPA, etc.

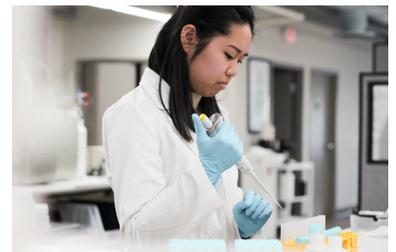
Our services apply to a variety of applications at biogas sites working with renewable energy, including RNG interconnection compliance (both startup and ongoing), pipeline integrity, process control, and various research and development efforts.

## Applications

- Biogas
- Dairy, Hog and Pig Farms
- Gaseous Fuels
- Landfills
- Natural Gas
- Wastewater Treatment Plants
- Food Waste Digesters (co-digestion)
- Others

## Available Services

- Laboratory analysis of biogas composition, including:
  - Methane (CH<sub>4</sub>)
  - Carbon Monoxide (CO)
  - Carbon Dioxide (CO<sub>2</sub>)
  - Hydrogen (H<sub>2</sub>)
  - Nitrogen (N<sub>2</sub>)
  - Oxygen (O<sub>2</sub>)
  - Mercury (Hg)
  - Ammonia (NH<sub>3</sub>)
  - Halocarbons
  - Inorganic Chlorine (Cl) and Fluorine (F)
  - Bacteria (Total Bacteria, SRB, APB, IOB)
  - Odors, Dust and Liquids
  - Aldehydes and Ketones
  - Siloxanes (TMSOL, L2, L3, L4, L5, D3, D4, D5, D6, Total Siloxanes, Total Organic Silicon)
  - Metals in Gas (As, Cu, Sb, Pb)
  - Volatile Organic Compounds (VOCs)
  - Semi-Volatile Organic Compounds (SVOC-NDPA)
  - Total and Speciated Sulfur
  - Hydrocarbon Dew point
  - Heating Value, Compressibility, & Relative Density
  - Moisture
  - PCBs and Pesticides
  - Carbon-14
  - Radiological Testing (Gross Alpha and Beta, Radon)
- Weekly sampling system rental, sample cylinder rental, instructions, and supplies to ensure your sampling team delivers quality samples for analysis
- On-site sampling from our certified Field Services team
- The industry's best turnaround time, with expediting options to meet your specific project needs





## Biogas Testing Services

Require additional testing? Contact our lab as we may have other services available upon request.

Analyte	General Method(s)	Sampling Method(s)
Major Gases: CO <sub>2</sub> , CH <sub>4</sub> , O <sub>2</sub> , N <sub>2</sub> , CO, H <sub>2</sub> , Hydrocarbons (C6+)	<ul style="list-style-type: none"> <li>ASTM D1945, D1946</li> <li>EPA Method 3C, 18</li> </ul>	<ul style="list-style-type: none"> <li>Passivated High-Pressure Cylinder**</li> <li>Tedlar Bag</li> </ul>
Heat Value, Compressibility, & Relative Density	<ul style="list-style-type: none"> <li>ASTM D3588</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Hydrocarbon Dewpoint	<ul style="list-style-type: none"> <li>Peng-Robinson Equation of State</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Total Hg	<ul style="list-style-type: none"> <li>ASTM D5954</li> </ul>	<ul style="list-style-type: none"> <li>Gold Sorbent Traps</li> </ul>
Siloxanes and Silanols: TMSOL, L2, L3, L4, L5, D3, D4, D5, D6, Total Siloxanes, Total Organic Silicon	<ul style="list-style-type: none"> <li>ASTM D8230</li> </ul>	<ul style="list-style-type: none"> <li>Siloxane Sorbent Traps**</li> <li>SUMMA Canister</li> <li>Tedlar Bag</li> </ul>
Total and Speciated Sulfur: H <sub>2</sub> S, COS, Mercaptans, Others	<ul style="list-style-type: none"> <li>ASTM D6228, D5504</li> </ul>	<ul style="list-style-type: none"> <li>Passivated High-Pressure Cylinder**</li> <li>Tedlar Bag</li> </ul>
Ammonia (NH <sub>3</sub> )	<ul style="list-style-type: none"> <li>NIOSH 6016</li> </ul>	<ul style="list-style-type: none"> <li>NH<sub>3</sub> Sorbent Traps</li> </ul>
VOCs (Common Biogas): Ethyl Benzene, Methacrolein, p-Dichlorobenzene, Toluene, Vinyl Chloride	<ul style="list-style-type: none"> <li>EPA TO-15</li> </ul>	<ul style="list-style-type: none"> <li>SUMMA Canister**</li> <li>Tedlar Bag</li> </ul>
VOCs (Comprehensive)	<ul style="list-style-type: none"> <li>EPA TO-15</li> </ul>	<ul style="list-style-type: none"> <li>SUMMA Canister**</li> <li>Tedlar Bag</li> </ul>
SVOC: N-nitroso-di-N-propylamine (NDPA) <i>Others Available Upon Request</i>	<ul style="list-style-type: none"> <li>Modified EPA 0010</li> <li>EPA SW-846 Method 8270D</li> </ul>	<ul style="list-style-type: none"> <li>SVOC Sorbent Trap</li> </ul>
Inorganic Chlorine and Fluorine	<ul style="list-style-type: none"> <li>EPA 9056A</li> </ul>	<ul style="list-style-type: none"> <li>HCl/HF Sorbent Traps</li> </ul>
Halocarbons	<ul style="list-style-type: none"> <li>EPA TO-14</li> </ul>	<ul style="list-style-type: none"> <li>Passivated High-Pressure Cylinder**</li> <li>SUMMA Canister</li> <li>Tedlar Bag</li> </ul>
Metals: As, Cu, Sb, Pb <i>Others Available Upon Request</i>	<ul style="list-style-type: none"> <li>OL-21G* and EPA 6020B</li> <li>Modified EPA Method 29</li> </ul>	<ul style="list-style-type: none"> <li>Metals Sorbent Trap**</li> <li>Impinger Sampling Train</li> </ul>
PCBs and Pesticides (Organochlorine)	<ul style="list-style-type: none"> <li>EPA TO-10A</li> </ul>	<ul style="list-style-type: none"> <li>PCBs and Pesticides Sorbent Trap</li> </ul>
Bacteria: Total Bacteria, SRB, APB, IOB	<ul style="list-style-type: none"> <li>qPCR Technique</li> </ul>	<ul style="list-style-type: none"> <li>Custom Sampling Apparatus</li> </ul>
Moisture	<ul style="list-style-type: none"> <li>ASTM D1142, D5454, D4888</li> </ul>	<ul style="list-style-type: none"> <li>Performed Onsite</li> </ul>
Aldehydes and Ketones	<ul style="list-style-type: none"> <li>EPA Method TO-11A</li> </ul>	<ul style="list-style-type: none"> <li>Aldehyde and Ketone Sorbent Trap</li> </ul>
Radiological Testing Gross Alpha and Beta Radon (Rn <sup>222</sup> ) Lead (Pb <sup>210</sup> )	<ul style="list-style-type: none"> <li>Gross Alpha and Beta: EPA 900.0</li> <li>Radon (Rn<sup>222</sup>) and Lead (Pb<sup>210</sup>): Gamma Spectrometry</li> </ul>	<ul style="list-style-type: none"> <li>Gross Alpha and Beta: Filter</li> <li>Radon (Rn<sup>222</sup>): Sorbent Trap</li> <li>Lead (Pb<sup>210</sup>): Filter</li> </ul>
Odors, Dust, Liquids	<ul style="list-style-type: none"> <li>OL-71*</li> </ul>	<ul style="list-style-type: none"> <li>Sorbent Trap</li> </ul>
Carbon-14	<ul style="list-style-type: none"> <li>ASTM D6866</li> </ul>	<ul style="list-style-type: none"> <li>Foil Bag</li> </ul>

\* Ohio Lumex Method

\*\* Preferred Sampling Apparatus; Recommended for Sample Stability and Sensitivity

### Sampling Systems, Equipment and Supplies Available for Purchase or Rent

On-site service is available to perform sampling



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