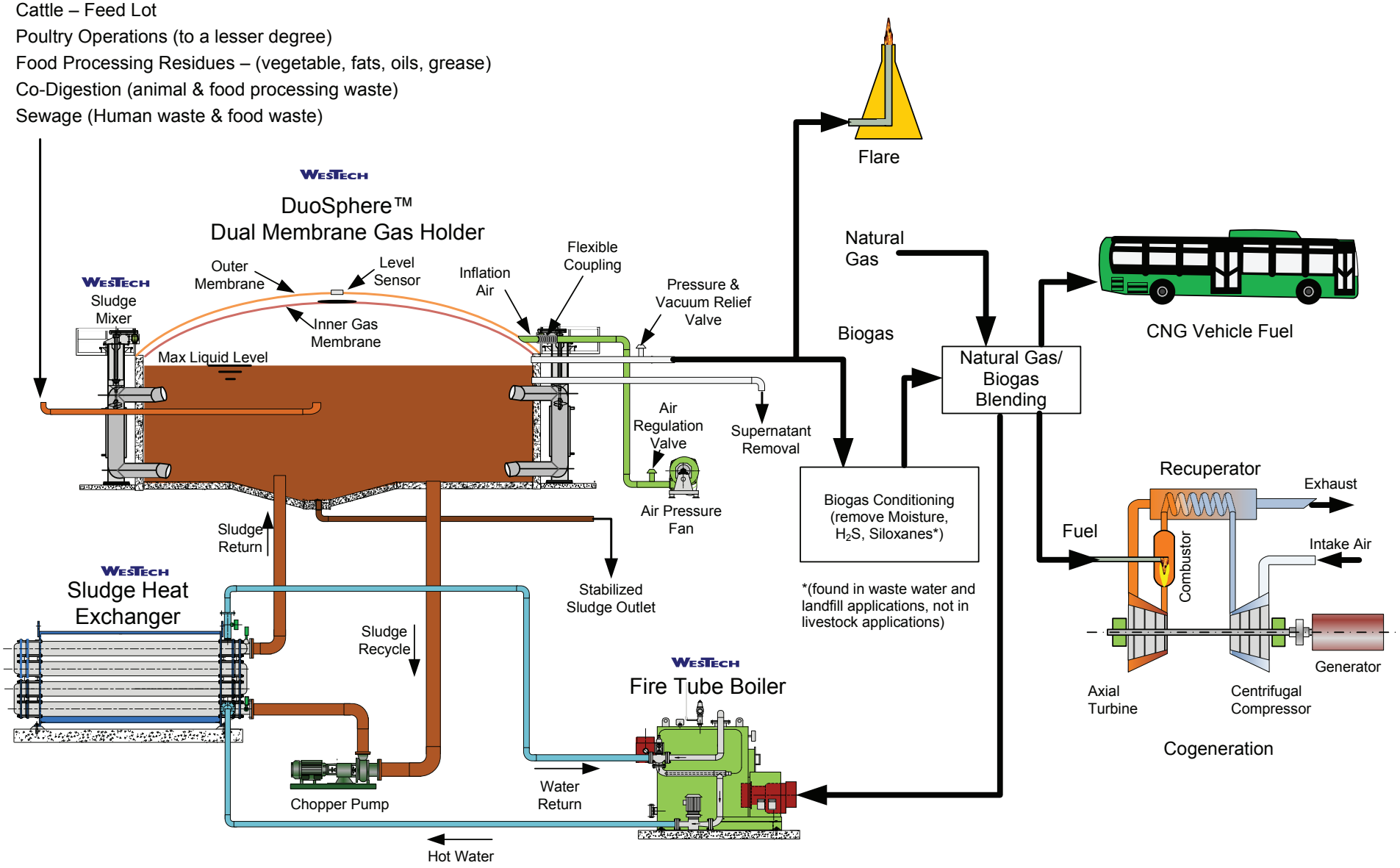
- Dairy Operations
- Swine Operations
- Cattle – Feed Lot
- Poultry Operations (to a lesser degree)
- Food Processing Residues – (vegetable, fats, oils, grease)
- Co-Digestion (animal & food processing waste)
- Sewage (Human waste & food waste)



Anaerobic Digester – CNG / Co-Gen

WesTech

DWN: **RCS** DATE:

WesTech's ***ExtremeDuty™ Sludge Mixers*** provide vigorous mixing of digester contents to prevent stratification and improve the anaerobic digestion process. Our sludge mixers reliably speed gas production for energy recovery while reducing foam and scum accumulation that typically occur in pump mix systems.Unlike pump mix and gas mix systems, the ExtremeDuty™ Sludge Mixers provide the flexibility of flow reversal. Downward pumping reduces foam and scum buildup that upsets the digestion process. Changing flow directions eliminate dead zones and stratification in your tank to optimize digester performance.

Anaerobic Digester

A variety of waste streams can be fed into the anaerobic digester in order to reduce the amount required for disposal and to generate renewable biogas. Each type of waste may be received and fed to the digester utilizing slightly different methods depending on its digestibility and handling requirements.

WesTech's ExtremeDuty™ Sludge Mixer

These mixers are an efficient and reliable way to keep the digester contents from stratifying. Since these unique mixers are reversible and can create upward or downward flows, they have a distinct advantage in preventing solids from accumulating at the top or bottom of the digester. A heat exchanger jacket can be added to provide some or all of the heat required without the need for a separate sludge recirculation pump.

Biogas Boiler & Tube-in-tube Heat Exchanger

Hot water from the boiler (or recovered from cogeneration) is pumped through the external tubes while sludge from the digester is recirculated counterflow through the inner tubes using special cast fittings. To ensure reliable performance, waste streams are not usually fed directly through the heat exchanger but are instead added directly to the digester to be mixed with the digesting sludge before being sent through the heat exchanger.

DuoSphere™ Digester Cover

Biogas is contained and stored at a constant low pressure inside of these specialized PVC-coated membrane structures. The outer membrane is kept inflated with small air fans. The inner membrane inflates and deflates depending on biogas demand and provides ample storage for any end use.

Biogas Conditioning

Biogas contains several contaminants and through several processes, H_2S, moisture, siloxane (and even CO_2, if necessary) can be removed to provide a high-quality renewable fuel that will not cause problems with the cogeneration equipment.

Biogas/Natural Gas Blending

The ability to blend biogas with a natural gas can provide many benefits for sizing of equipment and opens up a variety of options for more efficient and constant operation of the cogeneration equipment.

Cogeneration – Microturbine or Internal Combustion Engine

These options for producing renewable energy and electricity from the biogas can be sized and selected based on gas production capacity and other site-specific factors. Efficiency and technology has improved substantially, making onsite cogeneration more feasible than ever before.

CNG Vehicle Fuel

This exciting option is most effective if there are fleet vehicles that operate at or near the fueling station. Offsetting gasoline costs may prove to be a very significant savings to your operation.