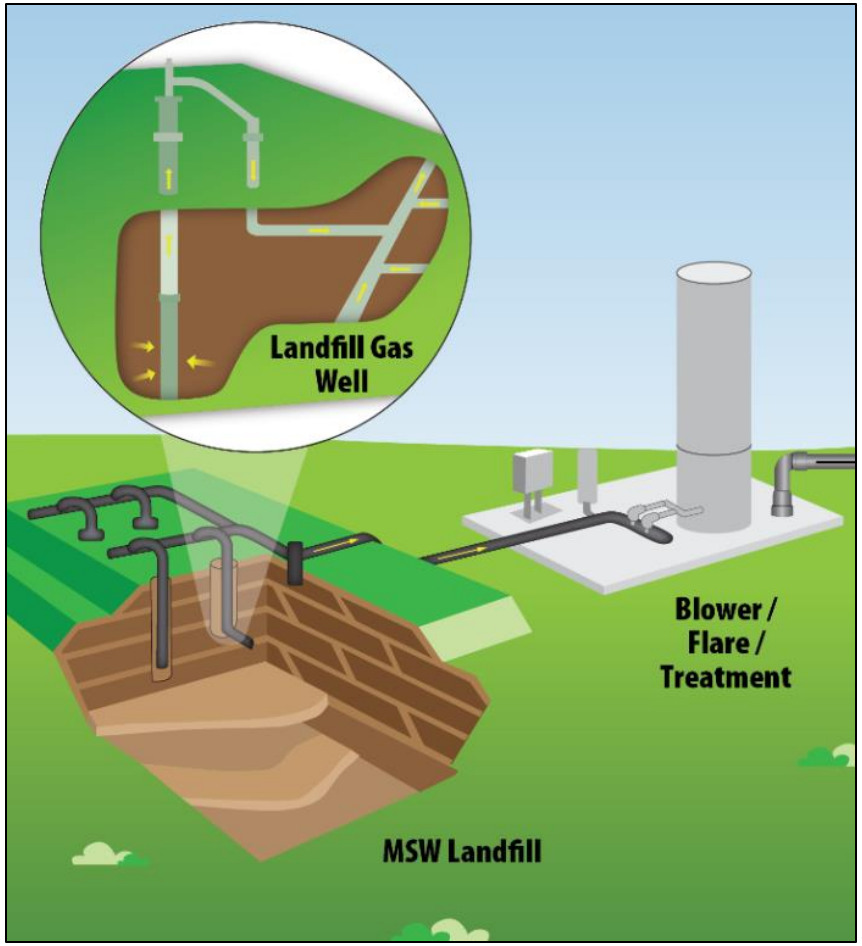
Blue Ridge Renewables

Fresno, TX

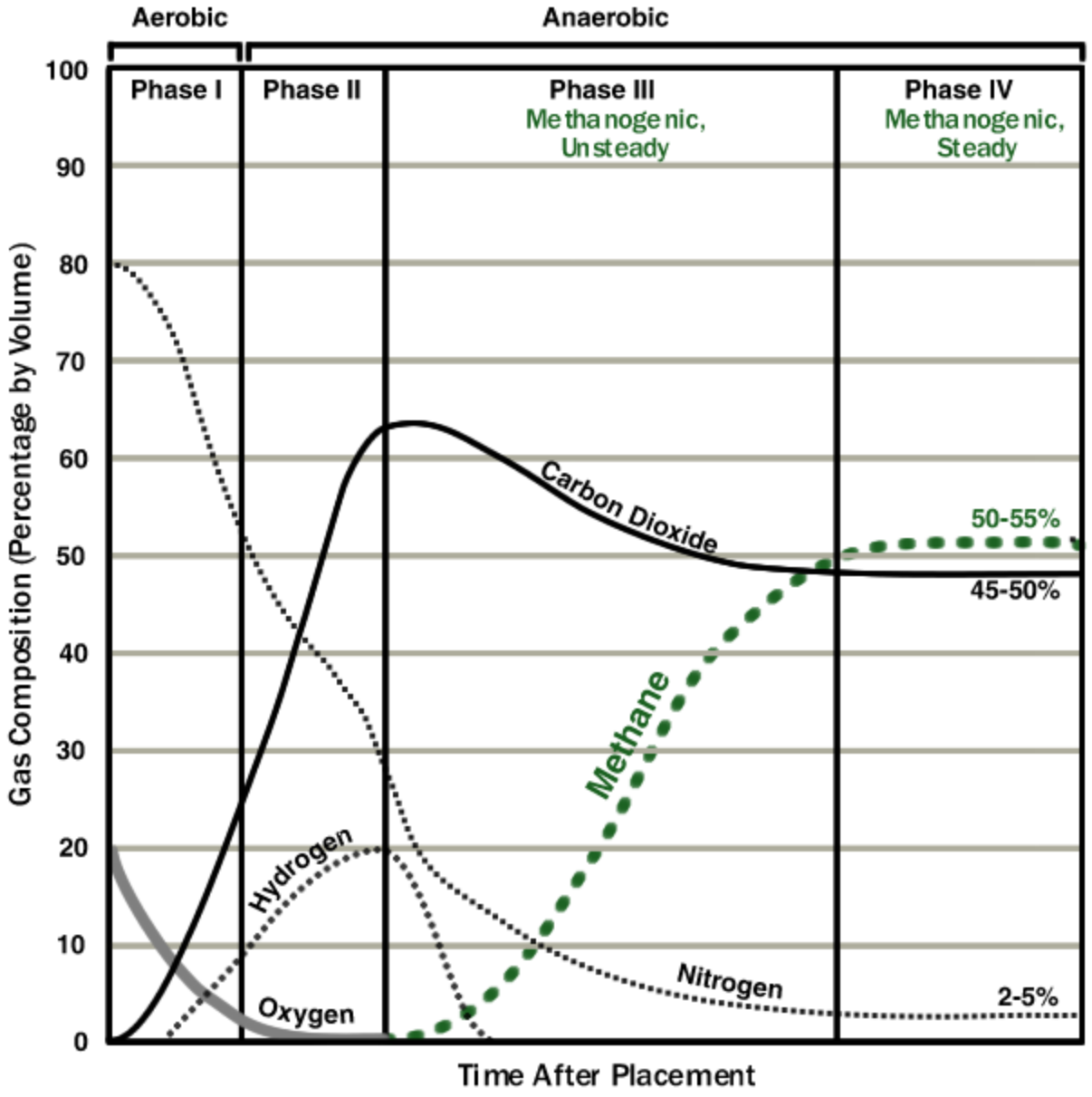
Landfill Gas Collection

- Waste enters the landfill and is covered with soil daily. After time the organic matter in the waste will break down and generate landfill gas.
- To extract landfill, wells and other extraction devices are drilled into the waste
- Blowers apply vacuum to the wells to extract the gas from the waste and route it to the blowers.



What is Landfill Gas?

- Landfill Gas (LFG) is generated by the decomposition of organic material in waste
- Landfill gas is composition is ~50% Methane and 50% Carbon Dioxide, along with other trace components.
- Gas decomposition rate dependent on various factors
    - Temperature
    - moisture
    - waste composition
    - soil composition

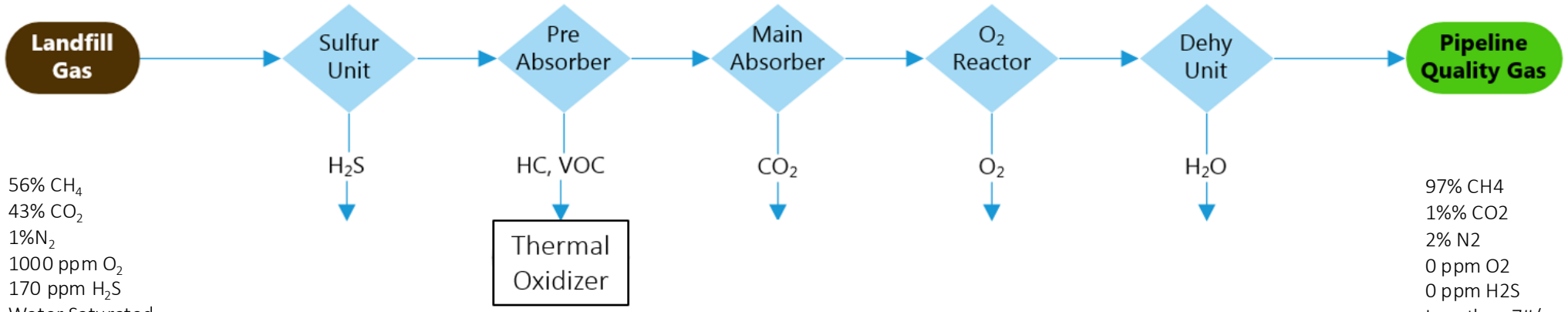


Source – EPA LMOP Program

Managing Landfill Gas

- Without RNG: All gas is flared and methane is combusted into carbon dioxide
- With RNG: Methane is utilized and transformed into a renewable energy source

Blue Ridge Landfill Process LFG to RNG Process



56% CH_4
43% CO_2
1%N_2
1000 ppm O_2
170 ppm H_2S
Water Saturated

Low levels:
- Many tace components

97% CH4
1%% CO2
2% N2
0 ppm O2
0 ppm H2S
Less than 7#/mmscf water

No other detectable components

- Morrow Energy uses a physical solvent called Selexol for landfill gas upgrading
- This process efficient, robust and reliable treating process for Landfill Gas with a 98% methane recovery
- 30% of all gas in the RNG market goes through a Morrow built system

History of the Blue Ridge Renewables RNG Project

- In 2018 Morrow Energy installed a 12,000 SCFM LFG to RNG facility at the Blue Ridge Landfill.
- The plant has now been in operation for nearly 8 years
- The average runtime of the facility over the life of the project is over 97%.
- The RNG facility directly supports ~20 full time jobs at the Blue Ridge Landfill
- The gas produced by the landfill is enough to heat 47,000 homes.
- Carbon benefit of RNG facility equivalent to 2,000,000 acres of forest, or offsetting CO2 from 182 Million gallons of gasoline