Del Rio Renewable Biofuels Project

INTERIM CASE STUDY: FALL 2021

Making RNG from Manure in the Texas Panhandle

Background

Del Rio Dairy, located in Friona, Texas, is about 150 miles west of San Antonio. Owned by the Rocky and Liz Gingg family, the farm milks 8,000 cows three times every day. There are also 800 dry cows and 4,000 young stock (heifers) on the farm.

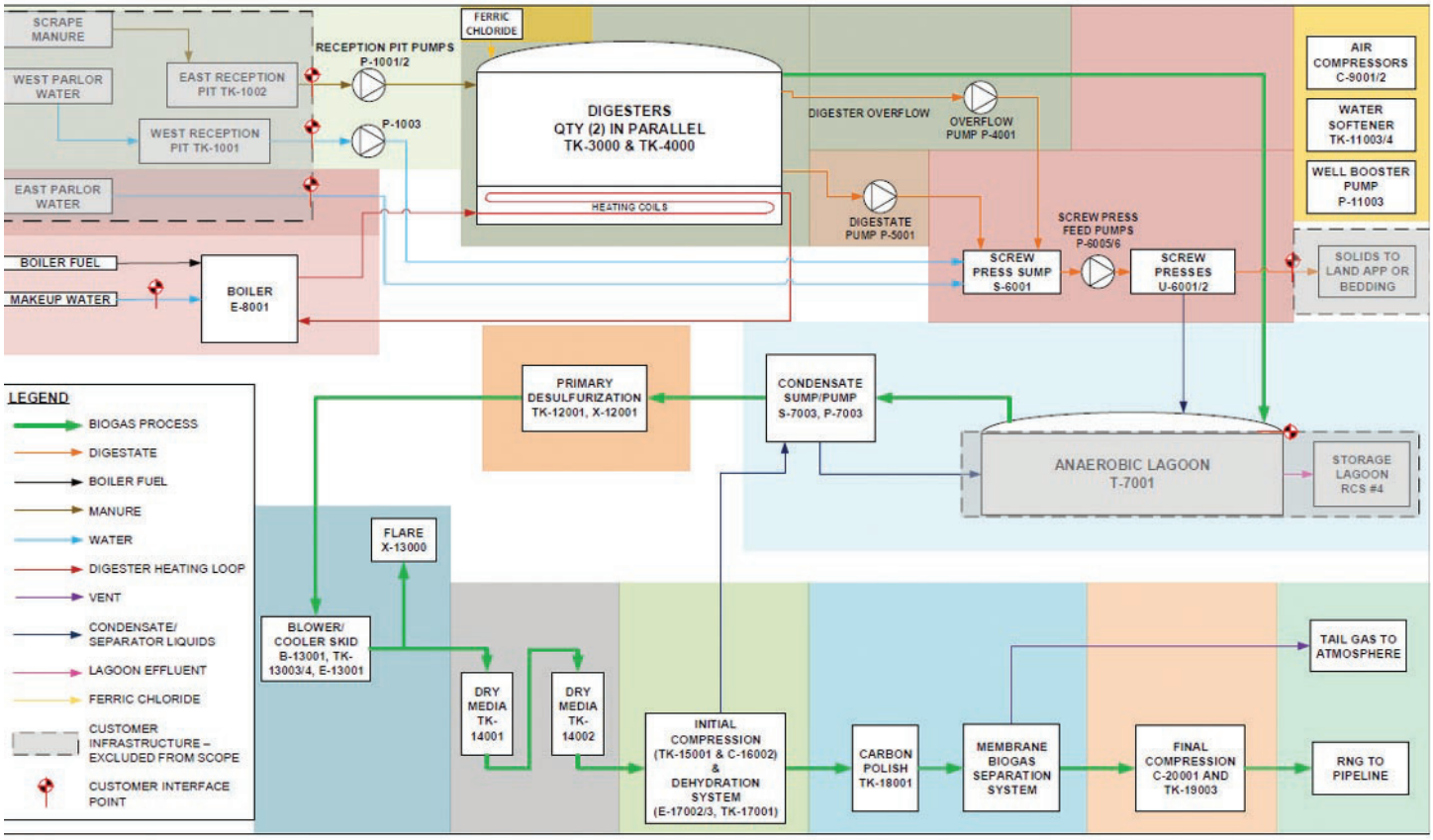
Desired Situation

In an effort to diversify the farm's revenue mix, Del Rio Dairy chose to incorporate making renewable natural gas (RNG) from their dairy manure into their strategy. The RNG produced from this project can generate both D3 RIN credits under the Federal RFS program and carbon credits under the CA Low Carbon Fuel Standard (LCFS) program.

System Implementation

Montrose was selected to be the Engineer, Procure, Construct (EPC) firm to provide a fully integrated system that will produce guaranteed gas quality to meet the local Atmos gas pipeline specification. All facets of project delivery including technology selection, detailed engineering design, guaranteed system performance and project schedule, and providing project cost certainty are handled by Montrose.

The block flow diagram of the system can be seen on the following page.



This project includes:

- Digester piston-style feed pumps
- Two 1,300,000 gal anaerobic digesters that are 95 ft in diameter and 26 ft wall height operating at mesophilic (98F) conditions
- Digester heating system
- Screw press dewatering of digestate with fiber bedding return to the farm
- Covered 17.6 million gallon anaerobic lagoon
- Thiopaq biological desulfurizer with dry media backup
- Sulfatreat dry media H2S polishing.
- Membrane gas upgrading system
- Final compression to 240 psi for pipeline injection

Project Design Data

State of the Art Gas Upgrading Technology

Daily Manure Flow 113,000 gallons a day

Projected Biogas Generation Rate – 464 SCFM

Daily RNG energy created – 387 MMBTu per day

As of November 2021, this system is under construction.

MONTROSE ENVIRONMENTAL

https://montrose-env.com/services/biogas-solutions/

Why RNG

Many US dairy farms have seen potential in converting their manure to RNG. RNG from dairy manure has been determined to have some of the most favorable environmental properties of any other transportation fuel. The carbon intensity of dairy derived RNG is so favorable that the score shows environmental benefits including preventing otherwise fugitive methane emissions to the atmosphere.

Dairy RNG is not just carbon neutral, it is extremely carbon negative compared to carbon intensive fossil fuels.

Why Montrose

Montrose is a trusted partner who can drive a dairy renewable natural gas project from beginning to end. A partnership with Montrose provides expert technology selection, project schedule to successful completion and single source accountability for meeting product gas purity specifications.

In-depth knowledge of dairy farm operations, manure handling, anaerobic digestion systems and gas upgrading technology provides an optimized approach to making the most gas possible at an affordable cost to the project.