



Aries Clean Technologies

Aries Pine Tree Project – Sanford, ME

April 2026



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Aries Clean Technologies

Company overview

Aries Overview



Innovative and proven biosolids disposal solution that eliminates PFAS pollutants & reduces GHG emissions



Aries Clean Technologies, LLC owns/operates a proprietary fluidized bed gasification technology that processes biosolids generated at municipal wastewater treatment plants (“WWTPs”). Aries designs, builds, owns and operates projects using its proven, patented gasification system for customers managing municipal biosolids. Since 2010, Aries has been gasifying materials that would otherwise be landfilled while producing renewable energy and beneficial use products.

- State-of-the-art, low-carbon intensity gasification technology designed to solve the biosolids disposal problem with facilities located near biosolids sources
- Owner of multiple patents
- Aries owns a commercial-scale gasification facility located 11 miles from Manhattan in Linden, NJ with capacity to process 400 tons per day of dewatered wastewater biosolids
- Second facility under development in Sanford, Maine

Historical Aries key milestones



New Biosolids Disposal Capacity Needed in Maine and New England

- Biosolids are produced every day at municipal wastewater treatment plants and need timely disposal
- Currently, large quantities of Maine/New England biosolids are shipped out-of-region for disposal (NY, NJ, Quebec, New Brunswick)
- Costs have increased for municipalities because:
 - New England landfill capacity is restricted
 - Many biosolids incinerators in New England have closed
 - Remaining incinerators in New England are aging/unreliable
 - Land application is banned in Maine/CT; bans being considered in other states
- The Aries gasification technology is an alternate management option:
 - High PFAS destruction efficiency
 - Recycles biosolids into a value-added product
 - Decreases GHG emissions compared to other solutions
 - Sustainable



Gasification is a Sustainable Biosolids Recycling Solution

Creating Value from Waste

- Generates clean energy
- Reduces trucking costs
- Technology meets new environmental regulations
- Produces beneficial use by-products

Positive Impact on the Environment

- Reduces greenhouse gases
- Protects water resources
- State-of-the-art air quality controls
- Destroys PFAS and other chemicals of concern in biosolids
- Advanced odor control safeguards

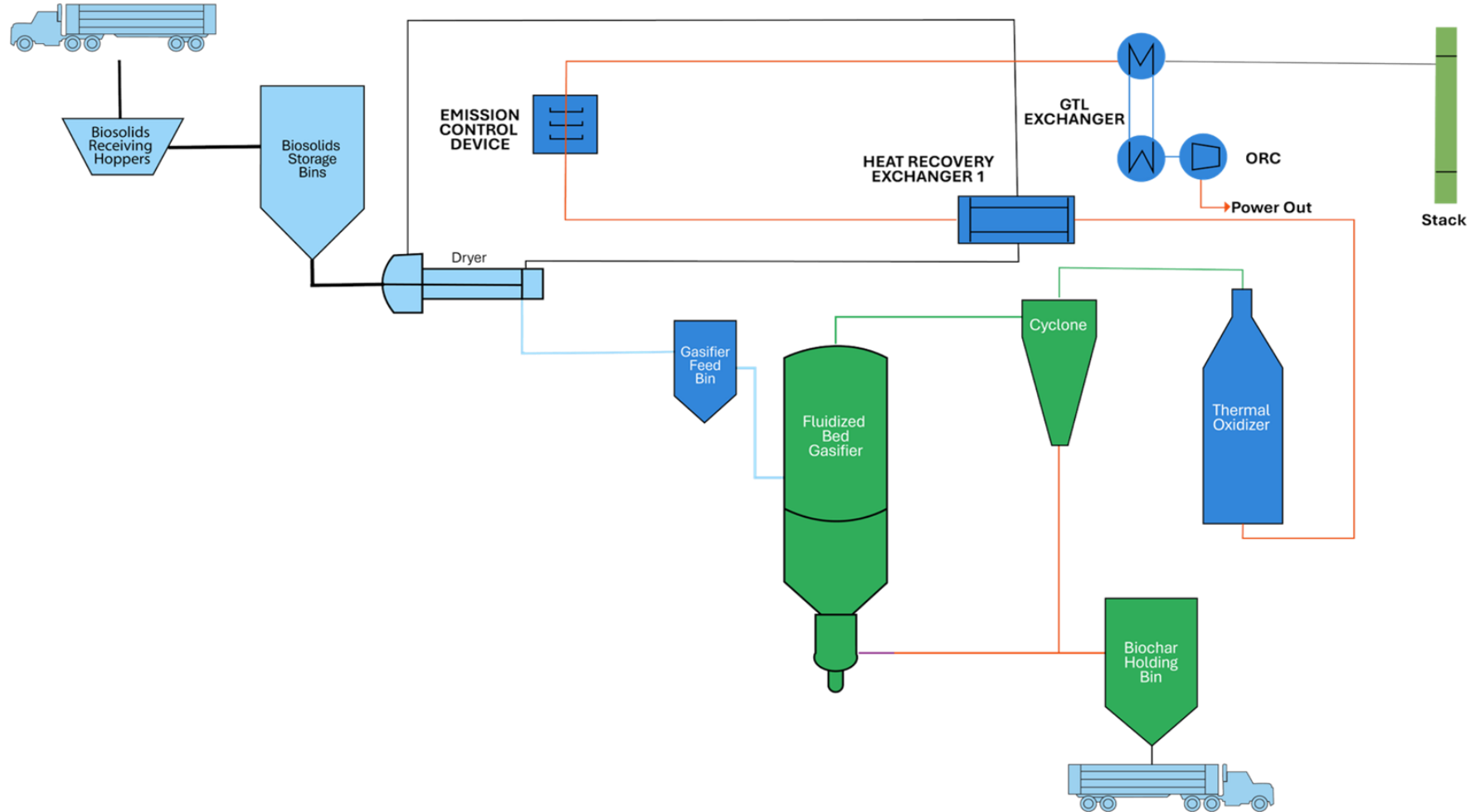
Supports Local Economies

- Creates well-paying local jobs
- Purchasing of local goods and services
- Saves municipalities money



Aries Facility – Simple Process Flow Diagram

Major Components: Dryers, Gasifier, Thermal Oxidizer, Air Quality Control System



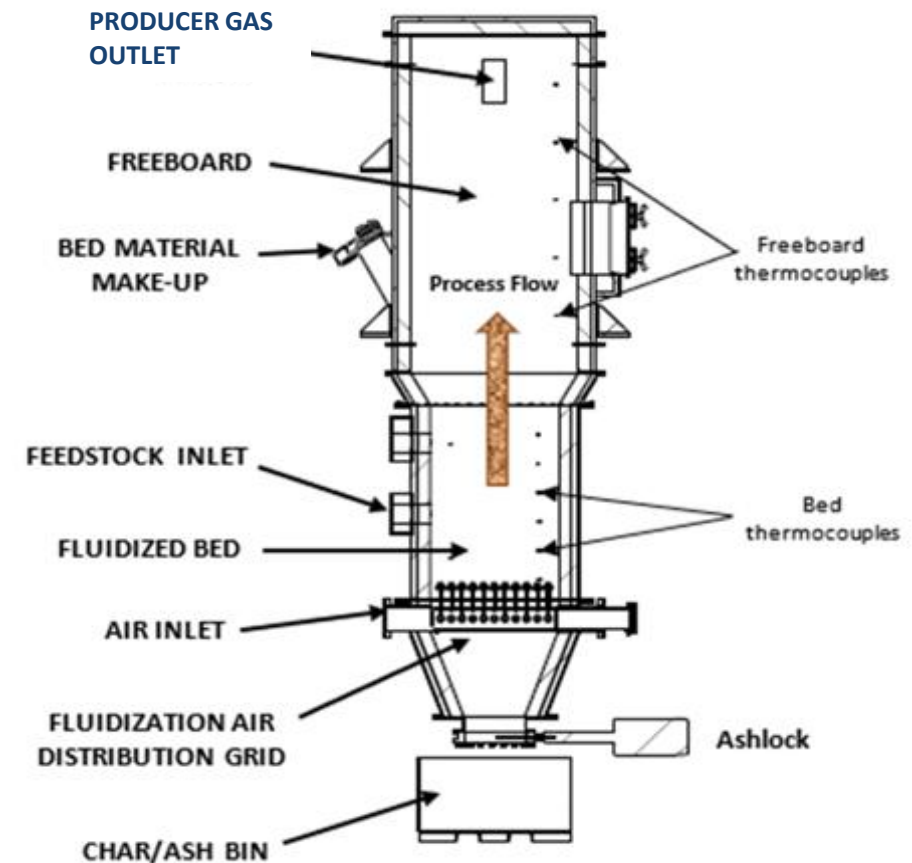
Fluidized Bed Gasification

The Aries Fluidized Bed Gasification Process heats biosolids at high temperatures under starved oxygen conditions. There is no flame within the gasifier and there is insufficient oxygen to sustain combustion.

Gasifier Technical Information

- Conversion of biosolids into an intermediate producer gas in an oxygen-controlled environment at a low operating pressure
- Thermo-chemical process
 - Heat generated through chemical reactions of biosolids and air
 - Bed temperature constant at 1,250 degrees F through control of biosolids to air ratio
 - Self-sustaining chemical reactions
 - Producer gas is primarily H₂, CH₄, CO, N₂ and CO₂
 - Limited amount of air enters the gasifier, so no combustion occurs in the vessel
 - Process does not require supplemental heat other than startup

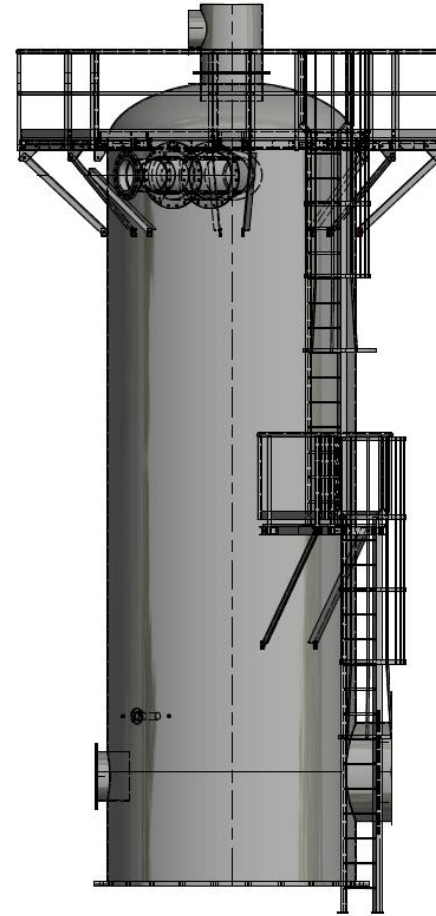
Gasifier Diagram



Thermal Oxidizer – Source of Heat Energy/Protects Air Quality

Thermal Oxidizer Technical Information

- The thermal oxidizer is a refractory lined steel vessel which blends producer gas with air and oxidizes the gas to generate heat and remove contaminants
- The thermal oxidizer operates at temperatures set at 2200 degrees F with over one second residence time
- Destroys Volatile Organic Compounds, Carbon Monoxide and PFAS compounds
- The thermal oxidizer also generates the heat used in the drying and gasification process and for electricity generation
- Aries recently contracted with an independent engineering firm to conduct PFAS destruction testing at our Linden, NJ facility

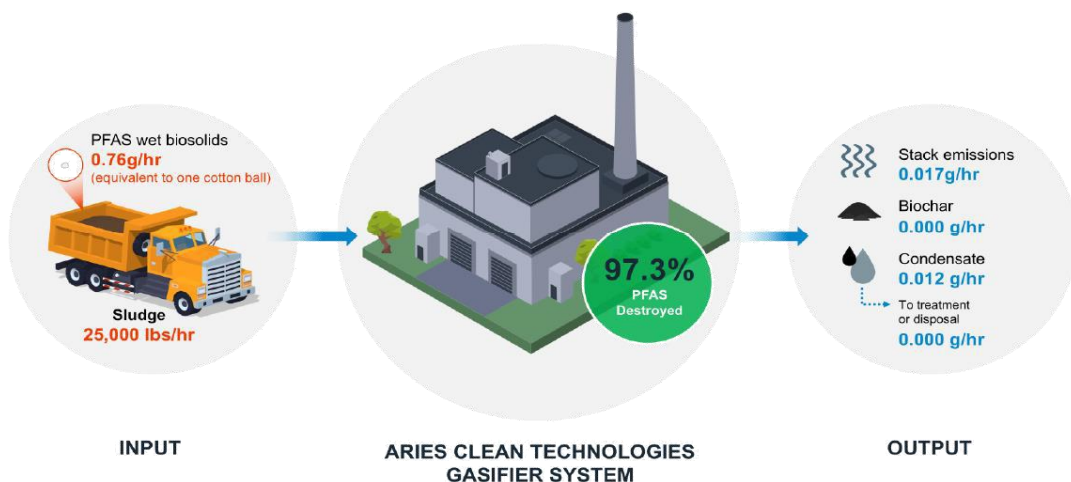


Aries' Design Substantially Destroys PFAS

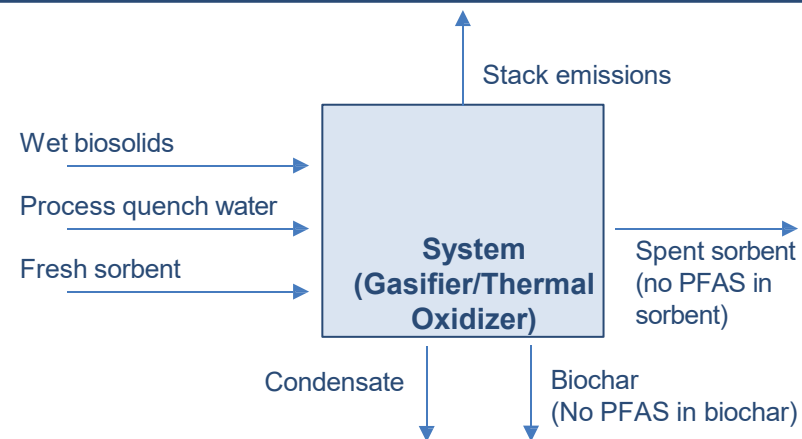
Recent proof by independent engineering firm shows >97% PFAS destruction

PFAS destruction study overview

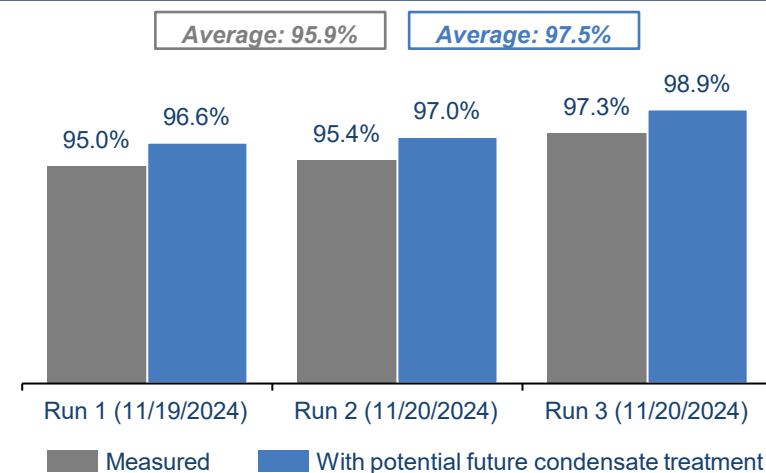
- In April 2025, Barr Engineering, a respected engineering consultant specializing in PFAS work, provided final report of testing on **material inputs and outputs of the plant for PFAS concentrations**
 - Barr **contributed to the development of EPA PFAS test methods**
- Barr provided mass balance numbers **confirming significant PFAS destruction** throughout the process; no PFAS in the biochar or spent sorbent
- PFAS testing used **EPA approved methods** (e.g., OTM 45 & Method 1633)
- **95% - 97% destruction** across three runs when looking at the dryer + gasifier
 - Higher PFAS destruction compared to other gasification technologies
 - Modeling showed that the maximum PFAS concentrations in ambient air were 30 times lower than the most stringent state ambient air standards (MI)
- Barr concluded **“It is reasonable to expect that even greater PFAS destruction can be achieved with continued process optimization”**



Study mass balance diagram



PFAS removal efficiency results



Air Quality Control/Renewable Energy

State-of-the-Art Technology

- Aries uses best available control technology (BACT) as determined by EPA and ME DEP
- Facility will protect air quality and prevent odors
- Thermal oxidizer for CO, VOC and PFAS destruction
- Scrubber for acid gas removal
- Ceramic filter for particulate removal
- Selective catalytic reduction system for NOx removal
- Facility will have an Organic Rankine Cycle system to generate renewable electricity



Aries Linden Status

- Privately financed
- Finished construction Q4 2023
- Commercial scale proof-of-concept facility
- Capacity to process 130,000 TPY of biosolids
- Intermittent operations 2024 - 2025
- Intermittent run time due to dryer issues
- Facility temporarily idled for dryer replacement
- PFAS destruction proven through testing
- LCA confirms lower GHG emissions than:
 - Landfilling
 - Land application
 - Incineration



Aries Proposed Sanford Project

- A 400 TPD throughput capacity biosolids gasification facility
- 11-acre site located in the Cyro Road industrial park
- Site purchase agreement signed with Sanford IDC
- Preliminary site plan review held with City Planning Department
- Project will be a regional facility accepting biosolids from Maine and central/northern New England
- Second generation facility design based on the Linden plant with many technical improvements
- Project will provide cost-effective long-term sustainable biosolids disposal for Sanford and other Maine communities
- Project will bring economic benefits to Sanford



Aries Sanford Project Costs/Timeline

- **Capital Cost:** ~\$180 million
- **DEP air/solid waste license applications submitted**
- **Permitting timeline:** ~1 year for local and state approvals
- **Construction and commissioning timeline:**
 - 18 months
- **Privately financed project**
- **Commercial operations:**
 - Q4 2028



Aries Sanford Design Details

- **State-of-the-art air emissions/odor controls**
- **Air emissions will meet Maine DEP limits**
- **Biosolids throughput: 400 TPD**
 - Biosolids will have cake-like consistency; no free liquid
 - Biosolids delivered in enclosed trucks
 - No industrial biosolids accepted
- **Truck traffic: <20 trucks/day**
- Biosolids unloaded in enclosed building
- Building under negative air pressure
- Biochar production – 25 TPD



Aries Sanford Project

Community/Stakeholder Engagement

Sustained Community/Stakeholder Engagement Effort

- Numerous meetings with local officials/businesses
- Engagement with local and regional clean water facility managers
- Met with state senators, state representatives, Governor's office
- Meetings with environmental NGOs
- Met with Federal delegation
- Maine State Chamber of Commerce panel on PFAS
- Two Sanford public meetings (2/25 and 4/2)
- Social media channels
- Traditional media interviews
- Presentations at clean water industry conferences



Aries Sanford Project Takeaways

- **The Aries Sanford project will protect the environment**
- The project will bring a much-needed biosolids disposal/PFAS destruction solution to Maine, saving Maine WWTPs money
- The project will generate local tax revenue
- The project will bring economic benefits to Sanford:
 - 100 construction jobs
 - 30 permanent well-paying jobs; \$90k average annual wage
 - Substantial spending in the local economy
- Sanford will be a leader in environmental stewardship
- **Aries is committed to being a good neighbor**



Questions?

Thank you!

