



# Streamline

## Eliminating Emissions Through Technology

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# Streamline Innovations

*Streamline Innovations, Inc. develops and commercializes technologies that increase environmental stewardship and improve sustainability at attractive economics for our customers in the energy, water, and waste industries.*

- Valkyrie H<sub>2</sub>S removal technology offers a wide range of treatment applications for natural gas, water and waste industries
- Established as environmentally forward, with biodegradable chemistries and sustainable design
- Early foothold and validation in energy and wastewater with penetration in renewable fuels and industrial markets
- Focused on Digital Transformation through optimized operational technologies and advanced analytics



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Founded in 2016  
Over 100 Employees



21 Granted Patents  
14 Patents Pending  
Many in Progress

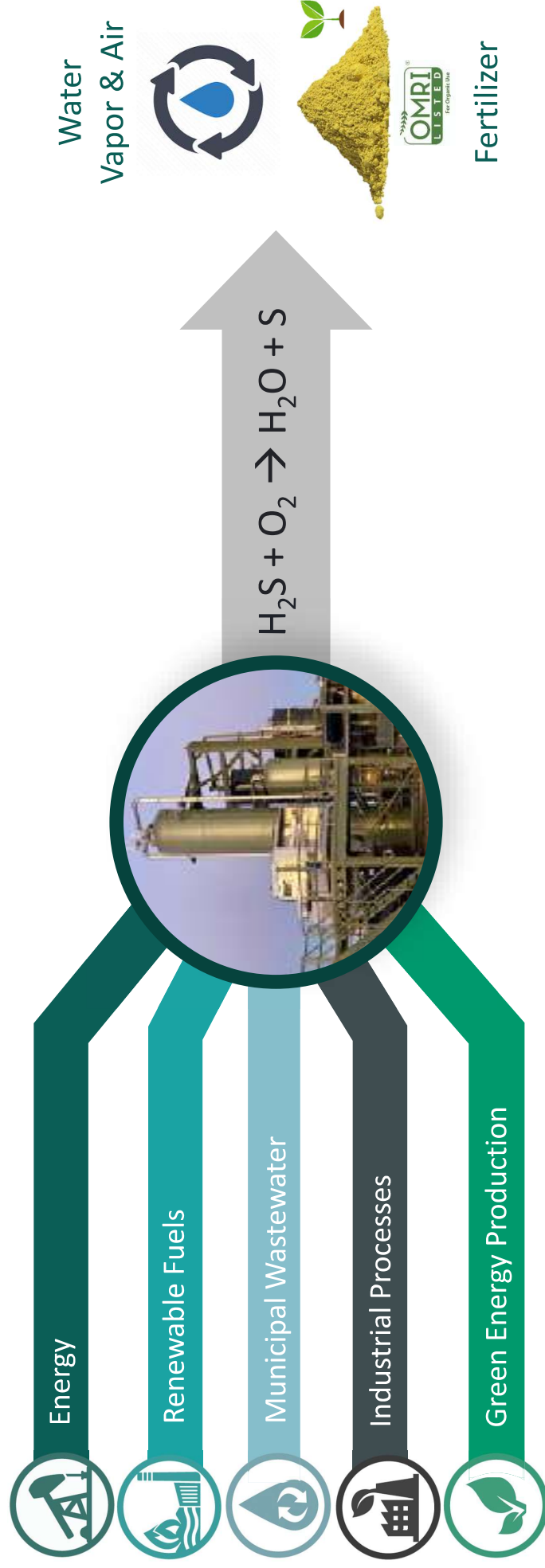


Experienced Energy,  
Municipal, Industrial  
Professionals

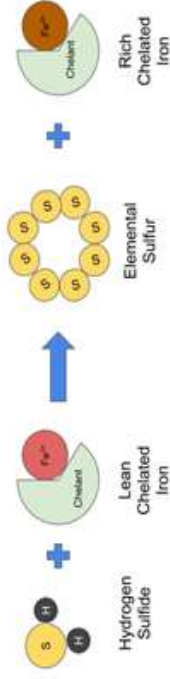
# The Valkyrie® Process

Sustainable H<sub>2</sub>S Treatment Solution  
“Next Generation REDOX”

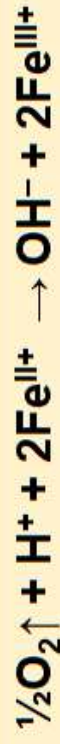
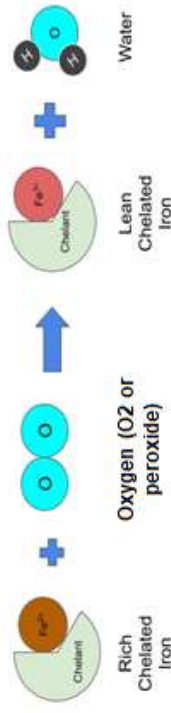
Valkyrie with Talon® converts H<sub>2</sub>S into elemental sulfur and water



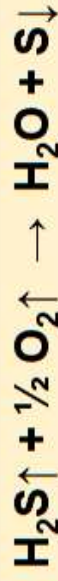
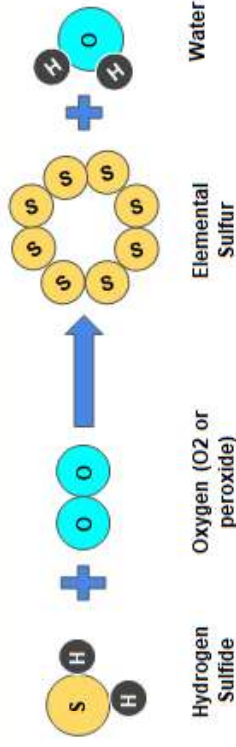
## Step 1: RED



## Step 2: OX



## Overall: REDOX





Streamline's patented biodegradable,  
non-toxic, regenerative catalyst.

Using Talon, the Valkyrie process converts  $H_2S$  into elemental sulfur. The Talon is regenerated with Oxygen and recirculated for continued treating. The sulfur is filtered, water washed, and dumped into common disposal bin, hauled to landfill or reused for agricultural soil amendment.



*Valkyrie + Talon = The ESG Solution for  $H_2S$*



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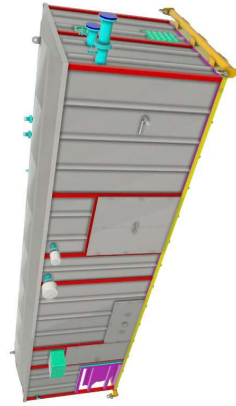
Valkyrie with Talon  
treats  $H_2S$  in natural gas to  
non-detect levels.



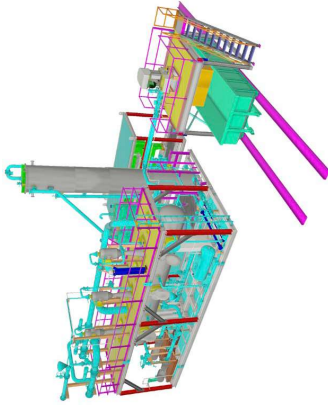


# Streamline Solutions

Wide product offering to meet various industry needs



Valkyrie ECO



Valkyrie ECO Flex



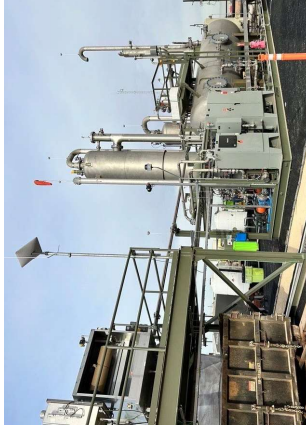
SuperValkyrie



Valkyrie Plant



Valkyrie Skid Unit



Valkyrie Ultra



NextGen Scrubber



Wastewater Treatment

# Commercially Validated Solution



## Valkyrie Fleet

- **57** Valkyrie units deployed in O&G Industry
- **7** additional Valkyries under contract
- **87%** of Valkyrie units operated by Streamline
- **99.7%** Uptime Average in 2023

Used by industry leaders to help meet their **ESG** goals

**ExxonMobil**



**eog resources**

**devon**

Repeat Business:  
Most customers have  
multiple Valkyrie  
units



# Valkyrie ECO

Optimized Valkyrie solution for H<sub>2</sub>S removal in the Renewable Natural Gas (RNG) industry

Available in two sizes: ECO and ECO Flex



**Valkyrie**  
ECO

## Operating Guidelines

- Treat continually with no cleanouts
- No pressure loss across the unit
- Limited human interface (non-skilled operators)
- Simple installation
- Infinite turnaround
- Modular nature that allows operation in parallel to increase treatment capacity



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**Valkyrie**  
ECO FLEX

## What Makes Us Different?

**4x – 6x** lower OPEX than solid media/scavengers.

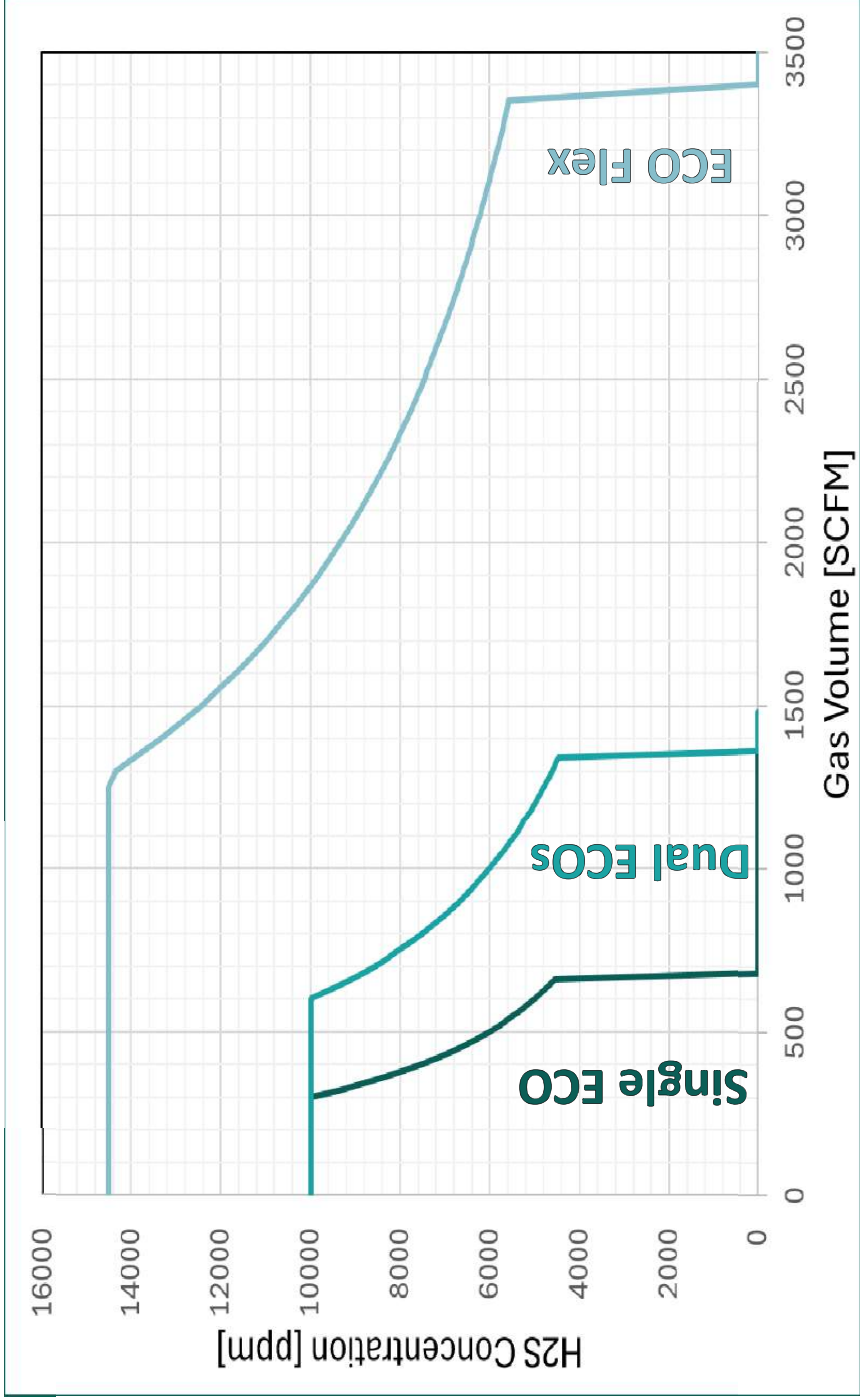
**Self-balancing** chemical reaction handles varying gas conditions **without downtime**.

No upstream conditioning equipment required.



# Gas Treating Ranges

Wide operating range with ability to handle swings in inlet gas conditions



Standard operating envelopes for a single ECO, dual ECOS, and an ECO Flex at 12 psig



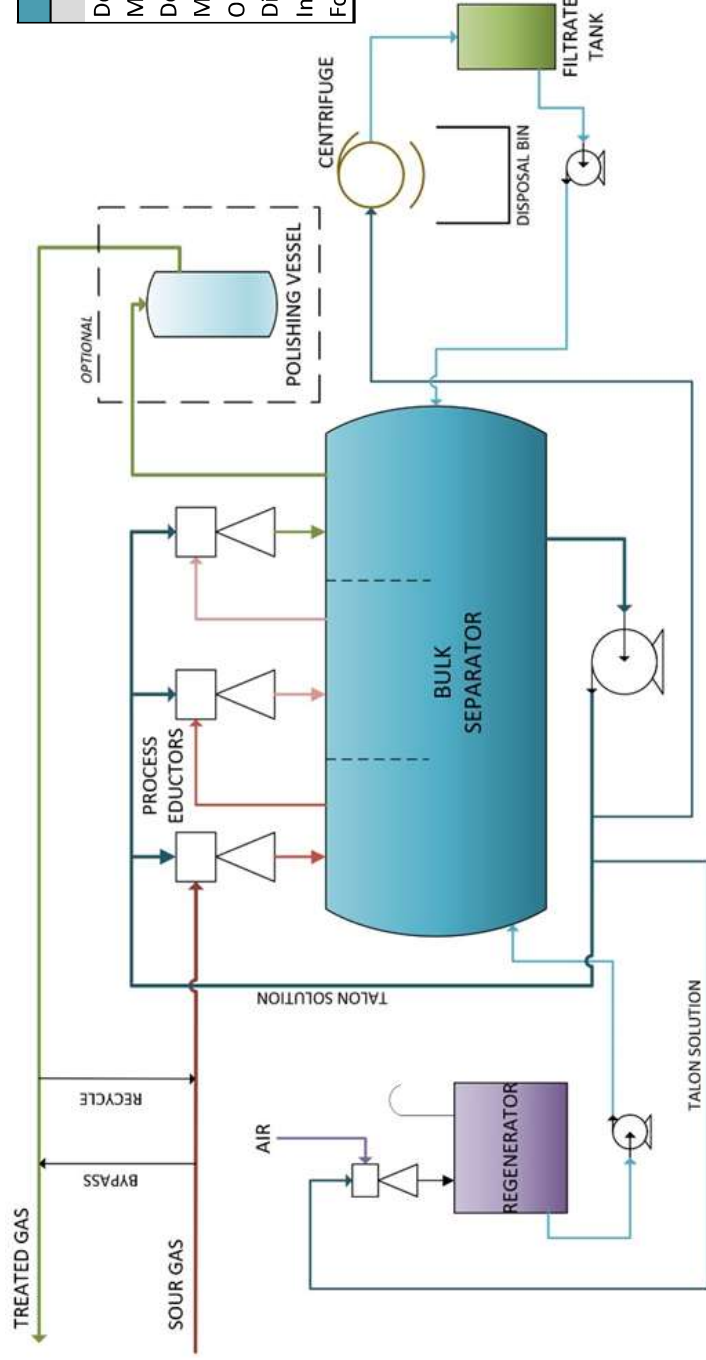
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To calculate LB Sulfur:

SCFM x H<sub>2</sub>S PPM

8,333

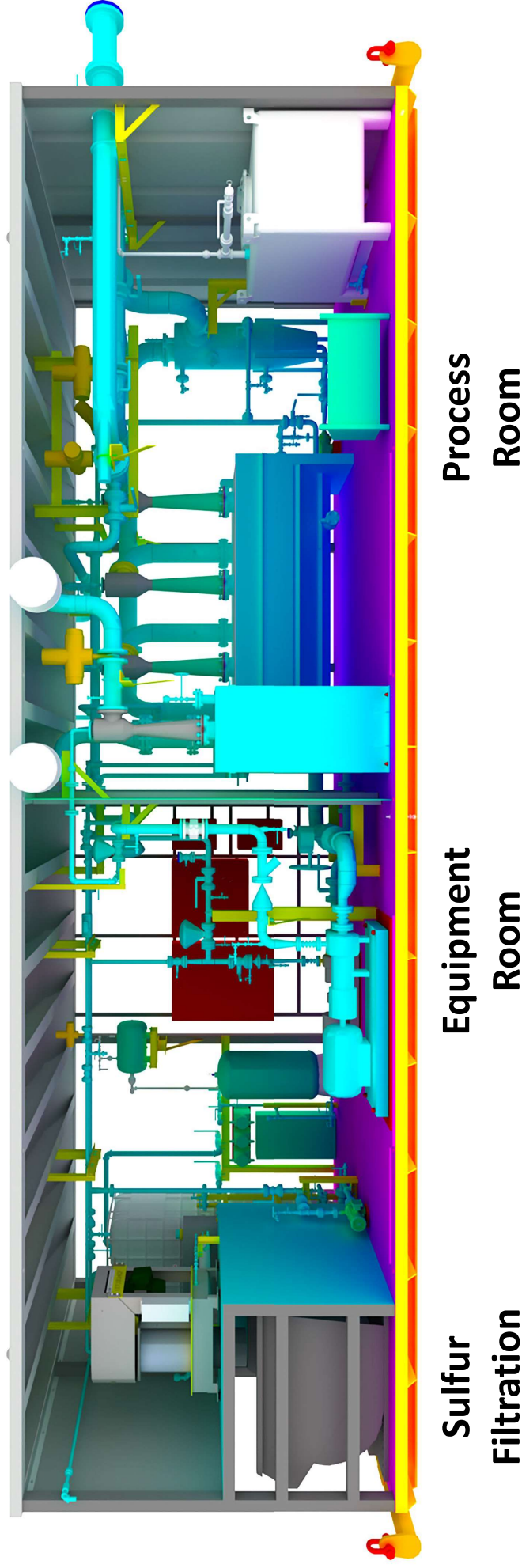
1 Long Ton (LT) = 2,240 lbs



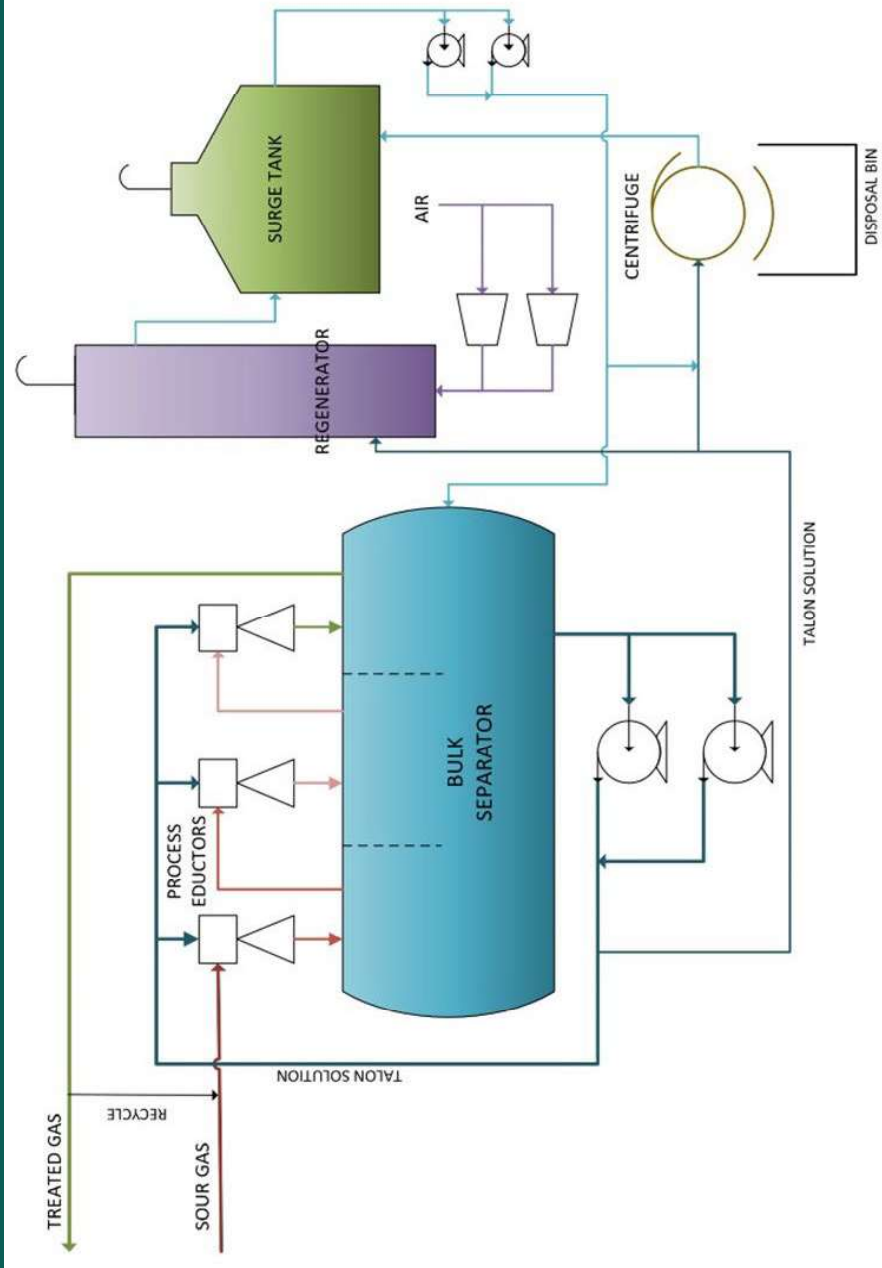
| Valkyrie ECO Design Parameters               |                 |
|----------------------------------------------|-----------------|
|                                              | Single Unit     |
| Design Gas Flow Rate                         | 500 scfm        |
| Max Inlet H <sub>2</sub> S Concentration     | 10,000 ppm      |
| Design Outlet H <sub>2</sub> S Concentration | < 20 ppm        |
| Max Sulfur Removal                           | 360 lbs/day     |
| Operating Pressure Range                     | -1 to 12 psig   |
| Differential Pressure                        | 0 in. WC        |
| Inlet Gas Temperature                        | 40 to 135 degF  |
| Footprint                                    | 13' x 13' x 42' |

| Valkyrie ECO Utility Consumption |             |
|----------------------------------|-------------|
|                                  | Single Unit |
| Connected Load (480V):           | 100 amps    |
| Inlet Water (estimated):         | 200 gal/day |
| Reject Water (estimated):        | 67 gal/day  |
| Instrument Air (@ 100psig):      | 5 cfm       |

# Valkyrie ECO Concept



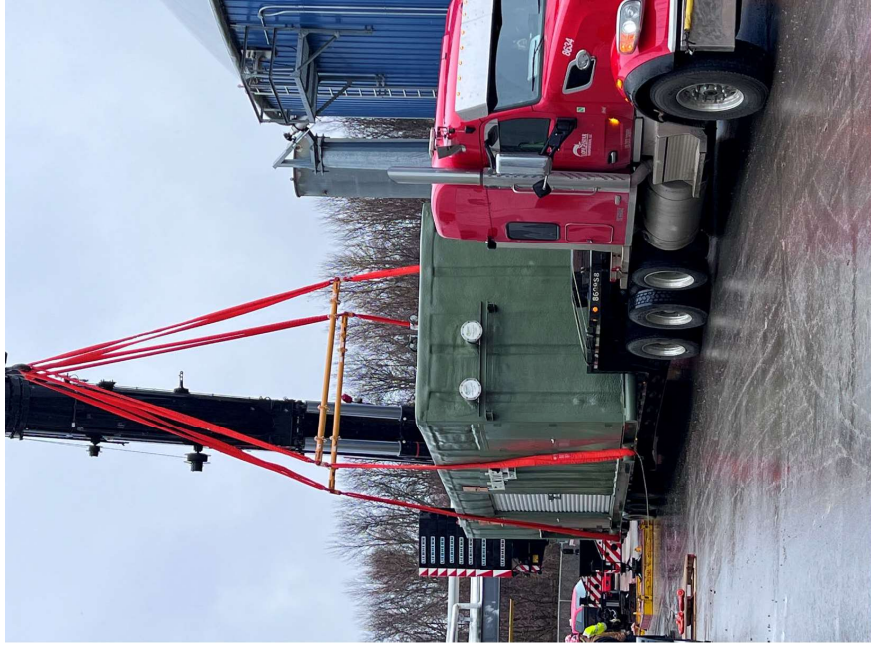




| ECO Flex Design Parameters       |           |         |  |
|----------------------------------|-----------|---------|--|
| Gas Treatment Train(s)           | 1         |         |  |
| Regeneration/Filtration Train(s) | 1         |         |  |
| Design Gas Flow Rate             | 2,500     | scfm    |  |
| Design Inlet Pressure            | 0         | psig    |  |
| Max Inlet H2S Concentration      | 14,500    | ppm     |  |
| Max Sulfur Removal Capacity      | 2,240     | lbs/day |  |
|                                  | 1.0       | LTPD    |  |
| Design Outlet H2S Concentration  | < 20      | ppm     |  |
| Operating Pressure Range         | -2 to 12  | psig    |  |
| Design Differential Pressure     | 0         | psi     |  |
| Inlet Gas Temperature            | 40 to 135 | degF    |  |
| Footprint                        | 75' x 75' |         |  |

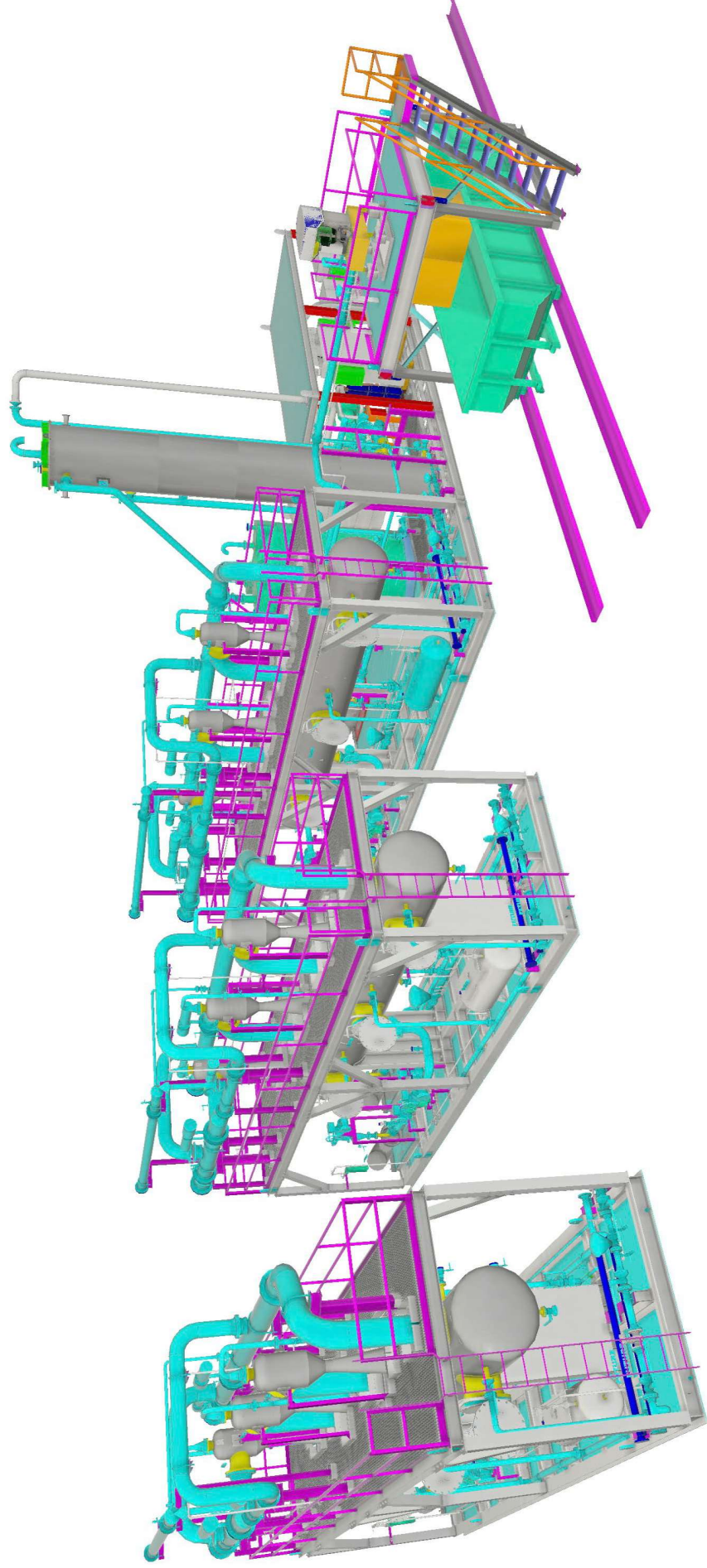
| ECO Flex Utility Consumption |          |
|------------------------------|----------|
| Connected Load (480V):       | 400 amps |
| RO Water:                    | TBD      |
| Instrument Air:              | TBD      |

# Valkyrie ECO – Modular Design



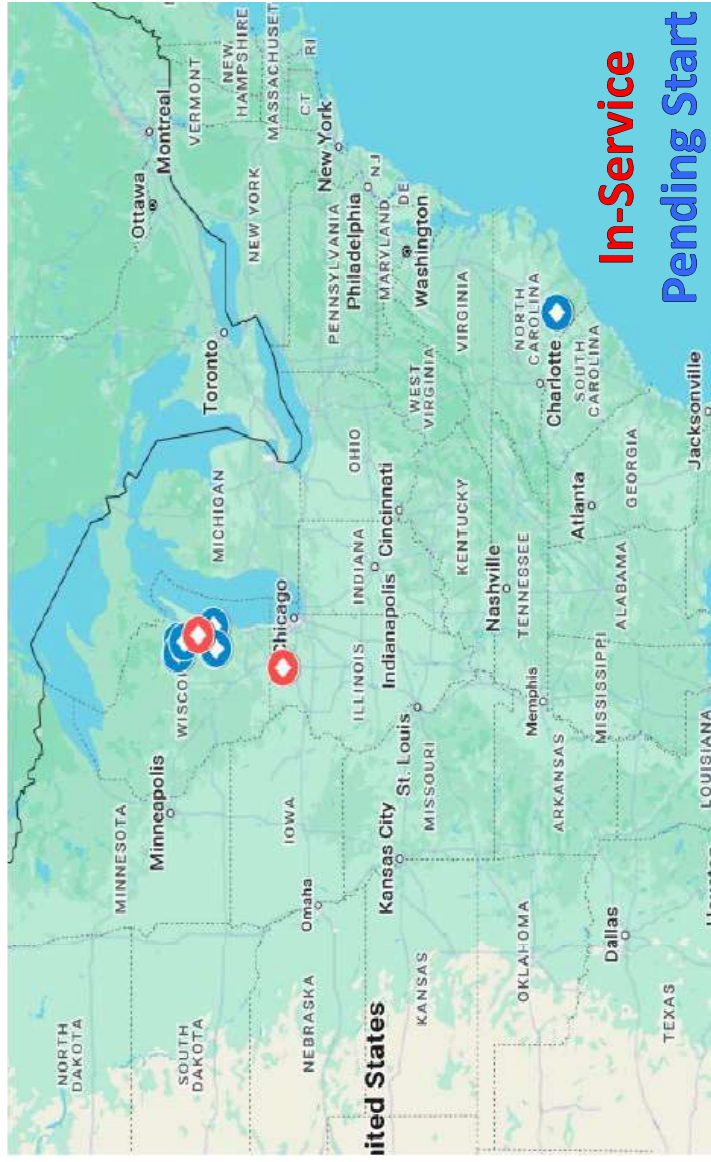


# Valkyrie ECO Flex – Multiple Trains





# Valkyrie Fleet: RNG



**3 units in-service**  
**10 additional units under contract**

*\*Under contract as of 5/6/2024*



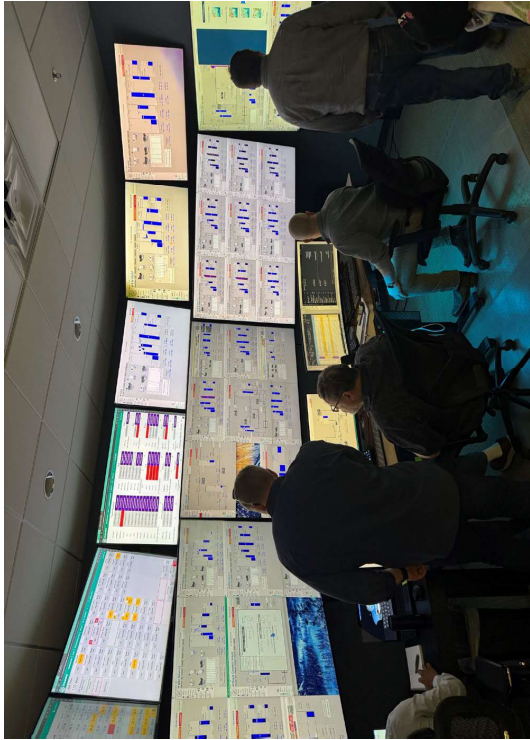
*We serve a variety of gas sources:  
landfills, pig farms, dairies,  
wastewater, and more.*

# VIP Service Package

Operational expertise combined with award-winning automation and control via the **Valkyrie Intelligence Platform**



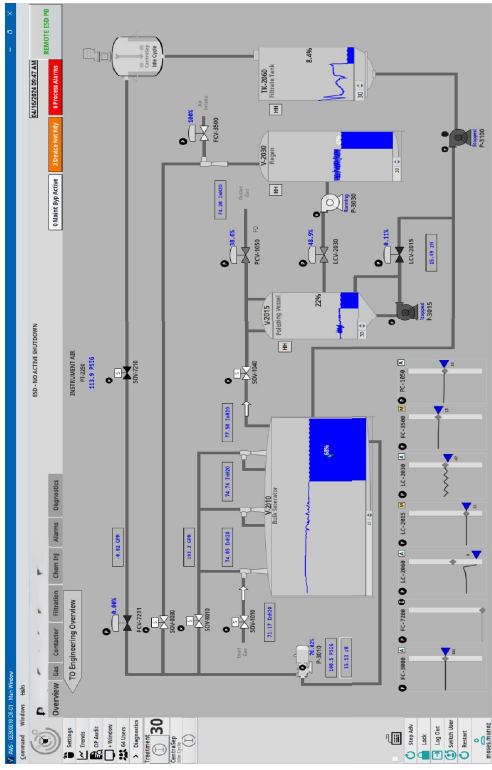
Designed to **upgrade** and **optimize** your REDOX treatment operations and supplement your in-house operations and engineering team without the burden of hiring multiple experts.



24/7 Control  
Room/Alarm  
Pipeline System

Real-Time  
Data/Predictive  
Analysis

Weekly Reports +  
Customer  
Operation Calls



**Operational Expertise:**  
**99.7% Uptime Average\***  
*\*across Valkyrie units operated by Streamline*



19,869,820  
LBS OF  
ORGANIC SULFUR  
PRODUCED



39,739,640  
LBS OF  
SO<sub>2</sub> AVOIDED



21,856,802  
GALLONS OF TRIAZINE  
WASTE AVOIDED



2,840,442  
MCF OF ACID GAS  
AVOIDED

AGI ESTIMATE BASED ON TREATED VOLUMES, ASSUMES 2% CO<sub>2</sub>

# Streamline

## 2023

### ENVIRONMENTAL SUSTAINABILITY SCORECARD





# Streamline

Eliminating Emissions Through Technology

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