



VLS Environmental Solutions

# WASTE SERVICES DIVISION

Business Overview



**Safety. Sustainability. Solutions.**

WASTE MANAGEMENT | RAILCAR SERVICES | MARINE SERVICES

# core VALUES

Our MISSION is to deliver innovative environmental solutions that support our clients in achieving their **sustainability** goals



## SAFETY

We are committed to the health and safety of our employees, contractors, clients, and communities.



## INTEGRITY

We engage in open, honest, and fair dialogue; hold ourselves and others accountable; and listen with the intent of learning.



## OUR EMPLOYEES

We provide opportunities to learn and grow while recognizing achievements



## INNOVATION

We are problem-solvers who develop processes, adapt to change, and continuously strive for improvement



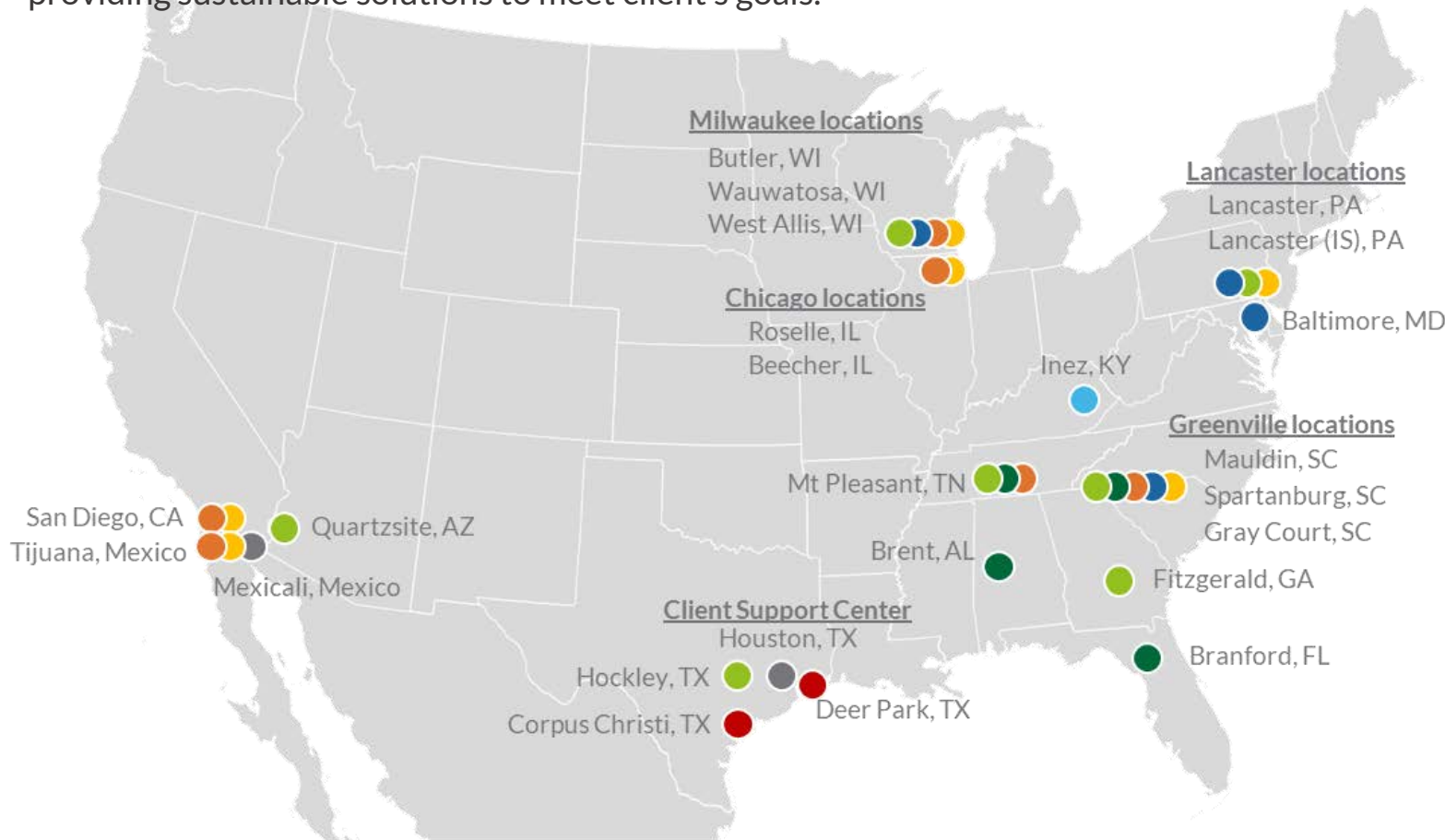
## PARTNERSHIPS

We collaborate with our clients, colleagues, and providers to improve the communities in which we work and live

# about our **WASTE DIVISION**

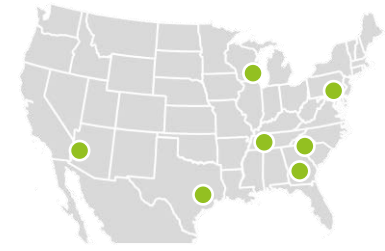
VLS was founded in 2007 with Mauldin, SC, as our first non-hazardous waste processing location. The facility was built with foundational tenets of broad acceptance of non-hazardous waste, comprehensive disposal options, and a fast-profiling process.

These beliefs have been the cornerstone of national, high growth business that focuses on providing sustainable solutions to meet client's goals.



- **Non-Hazardous Waste Processing**  
 Mauldin, SC      Lancaster, PA  
 Spartanburg, SC      Quartzsite, AZ  
 Mt Pleasant, TN      Fitzgerald, GA  
 Hockley, TX
- **Engineered Fuel Manufacturing**  
 Gray Court, SC  
 Mt Pleasant, TN\*  
 Brent, AL  
 Branford, FL  
 \*bulking only
- **Wastewater Treatment**  
 Mauldin, SC  
 Lancaster, PA  
 Baltimore, MD  
 Butler, WI  
 West Allis, WI
- **Industrial Services**  
 Spartanburg, SC  
 Lancaster, PA  
 Wauwatosa, WI  
 San Diego, CA  
 Port Arthur, TX  
 Tijuana, Mexico  
 Roselle, IL
- **10-day Transfer Hub**  
 Mauldin, SC  
 Butler, WI  
 West Allis, WI  
 \*Tijuana, Mexico (equivalent to Part B TSDF)
- **Waste Sequestration**  
 Deer Park, TX  
 Corpus Christi, TX
- **Waste-to-Energy Gasification**  
 Inez, KY
- **Offices**

# non-hazardous **WASTE PROCESSING**



Clients choose VLS for our quick response, broad waste acceptance, and expert shipping coordination.

## we manage the **LOGISTICS**



### PROFILES

Our profiling time is industry leading. Our skilled EH&S approval teammates are experts at quickly reviewing, assessing, and approving profiles that comply with regulations and our permits.



### TRANSPORTATION

We partner with carefully screened providers, brokers, and even our own logistics team. Our customer service representatives are experts at securing, planning, and coordinating logistics for your waste disposal needs.

## and give you **PROCESSING OPTIONS**



### WASTE-TO-ENERGY

We process solid waste into a fuel used by cement kilns and gasifiers that replaces natural resources such as coal, petroleum coke, and natural gas. Waste-to-Energy allows you to meet your goals of environmental sustainability.



### LANDFILL

When Waste-to-Energy and Engineered Fuel are not an option, we provide solidification and landfill services. We run through a series of tests prior to acceptance and processing to ensure waste meets specifications for landfill.



product destruction



used oil recycling

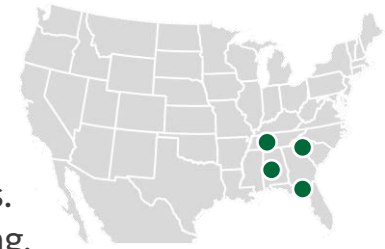


drums, totes, supersacks, pallets, bags



bulk, tankers, roll-offs, sludge boxes

# manufacturing **ENGINEERED FUEL**



VLS manufactures engineered fuel from industrial plant trash and other dry materials to help clients meet Zero Waste goals. Engineered Fuel was developed as an economical method of processing solids and more conducive to single-stream recycling.

## engineered fuel helps clients meet **ZERO WASTE** goals

### **1** LAST MILE OF WASTE

Manufacturers segregate valuables like scrap metal but are challenged with recycling the “last mile” of waste, like plant trash and production discards. These wastes are typically shipped as solid waste to landfills.

#### typical NHSM\*

- Plant Trash and Office Trash
- Cafeteria Trash
- Production Discards
- Obsolete Products
- Filter Cake
- Packaging Waste (plastics, cardboard)
- Wood Pallets, Crates, and Debris
- Carpets and Padding

### **2** LEGITIMATE FUEL

VLS facilities process unrecyclable material into a legitimate fuel that replaces coal, natural gas, and petroleum coke in cement kilns and gasifiers.

#### processing steps

- Every Load is Sampled
- Tested for Compatibility
- Approved for Processing
- Unloaded at Dock
- Quality Control Checked
- Blended
- Shredded
- Sampled and Tested to meet fuel specifications

### **3** NOT A SOLID WASTE

This processing exempts materials from being a solid waste. The materials are called **Non-Haz Secondary Materials** or **NHSM**.

### **4** NATURAL RESOURCE

VLS has exclusive partnerships with cement kilns to provide fuel that replaces coal, petroleum coke, and natural gas.

#### Environmentally Friendly Benefits of Engineered Fuel?

##### ZERO ASH

Ash is stabilized in the cement. Typical WTE facilities send 20-25% ash to a landfill.

##### LESS EMISSIONS

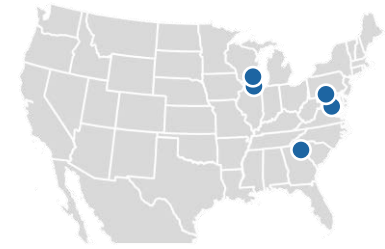
Limestone is a key ingredient in cement and acts as a natural scrubber.

##### HIGHER DESTRUCTION EFFICIENCY

Kiln temperatures are hotter than Energy from Waste facilities and thus have a 99.99% destruction efficiency.

\*Non-Hazardous Secondary Materials (NHSM) are not considered a waste per 40 CFR 241.3

# WASTEWATER treatment



Our wastewater treatment solutions combine state-of-the-art technology with a commitment to environmental preservation, and we are dedicated to helping our clients achieve their goals for sustainability.

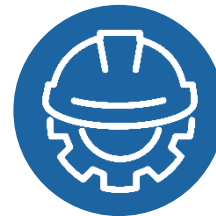
## TAILORED SOLUTIONS



Our wastewater treatment plant operators develop personalized treatment process solutions that are tailored to both meet customers' demands and facilitate sustainable wastewater treatment practices.

VLS is continually improving and investing in processes to innovate Sustainable solutions.

## SAFETY & TECHNOLOGY



Our industrial wastewater treatment facilities have the latest technology to ensure wastewater is properly treated, and undesirable chemicals and debris are safely removed from the water.

We treat your non-hazardous wastewater with a charged neutralization system. This system involves treating the water with three-stage air flotation technology.

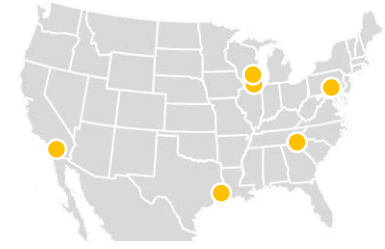
## LOGISTICS & SERVICE



Our industry leading, VLS-owned equipment is state of the art with VLS drivers providing a high level of service you expect. Equipment includes 5,000- and 6,000-gallon vacuum tankers, van trailers, and roll-off trucks.

VLS is recognized as the industry leader in solutions and service. Our representatives are available to assist you with your wastewater needs.

# INDUSTRIAL services



We are committed to achieving the highest level of service, always. We have an outstanding reputation for completing projects on time and on budget. Everyone, from our friendly and professional customer service representatives to the highly skilled technicians in the field share this commitment to excellence.

## SAFETY

- Top Tier Industry Training
- EMR <1.0
- State of the Art equipment/Gear
- JSA/Permits-Meet and exceed plant requirements
- Daily Toolbox talks

## SOLVING COMPLEX WASTE PROBLEMS

- “We have a problem, can you help? Of course.”
- Sales/Project Manager visit site
- Actively Listen- Client knows the problem, It’s our job to fully understand
- Together we formulate the Promised Result
- Execute /Deliver the Promised Result

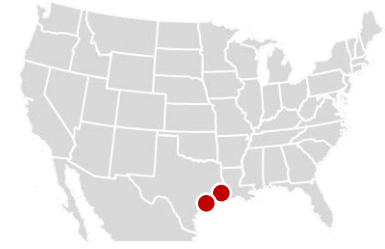
## CAPABILITIES

- Confined Space Entry & Rescue
- Supplied Air/Hazardous Location
- Water Blasting/Tube cleaning/3D non entry
- Hazardous / Non-Hazardous Tank Cleanouts
- Containerizing of Hazardous Materials
- Reactor Cleanouts
- Remediation/Demolition
- Spill Clean-Up
- Onsite Services- Profiling/Lab Packaging
- Steam/Disinfecting

## 20K AUTOMATION

- Non entry cleaning solutions
- 3D tank cleaning
- Safer, faster, and mitigates risk for clients
- Less strain on team members
- Less chance for injury
- Limit amount of team members needed

# waste **SEQUESTRATION**



Our waste sequestration facilities in Deer Park and Corpus Christi, TX, are a highly secure disposal of hazardous waste and non-hazardous waste liquids. The facilities minimize risks associated with wastewater and those with large industrial waste streams and provides an industry proven and efficient technology to sequester waste safely and permanently

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## Environmental Benefits

- No Discharges to Surface Water
- No Groundwater Contamination
- Low Air Emissions (CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>x</sub>, HAPs, VOCs)
- Protect people from exposure to chemicals

## Value to Industry

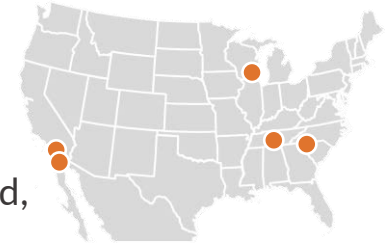
- Reduces risk and environmental impact
- Easily manage changes in manufacturing processes
- Reduces costs of environmental protection
- Helps small and large businesses to easily manage problematic wastes

## Typical Waste Streams

- Acids and bases without neutralization
- Acids, bases, and neutrals with metals
- Soluble or miscible organics
- Caustic sulfides (D003 reactives)
- Landfill leachates
- D, F, K, P, and U Code Wastes above land ban treatment standards
- High concentration acids, e.g. HCl, H<sub>2</sub>SO<sub>4</sub>, Phosphoric acids.
- D001 High TOC Subcategory (flash point < 140 ° F.
- Wastes subjects to Air Regulations and NESHAPS , e.g., CC (VOCs), FF (Benzene), XX (Ethylene Operations), B (Synthetic Organic Chemicals), and GGG (Pharmaceuticals)



# 10-DAY transfer hubs



Our goal is to work closely with our business partners, thus allowing us to use our environmental experience to provide rapid, reliable, and error-free waste management. We effectively track inventory, package, pick up, treat, recycle or dispose of all types of waste for our customers.

## 1 TRANSFER STATIONS

Our hazardous waste transfer station and equipment yard can hold packaged hazardous waste, in secure cells, prior to shipment for recycling, treatment and disposal.

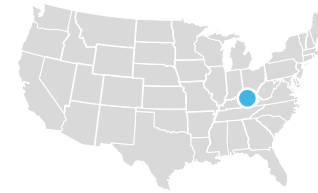
## 2 TRANSPORTATION

We own a large fleet of locally based, fully permitted, equipment, vehicles and trailers that can safely transport all types of hazardous waste throughout North America.

## 3 PARTNERSHIPS

Our long-term partnerships with national treatment and recycling facilities enable us to give our customers a variety of competitive options for waste treatment, disposal, and recycling options.

# gasification at **VLS KENTUCKY**



VLS and Inez Power formed a strategic partnership to capitalize on growing Zero Landfill initiatives. Located in Debord, Kentucky, the gasifier is a patented technology and is considered the only true gasification unit in the United States.

## Construction

Intelligent Design



The gasification technology was developed from empirical data on a Full Scale demonstration plant.

All of the major components are shop assembled and field connected. This approach provides for a significantly higher level of quality control on component level fabrication.

## Patented Process

Superior Energy Production



The patented process has an energy ratio over 625 kWh/ton, which is a 25% improvement over typical WTE.

Typical incineration and WTE facilities have an energy ratio of 500 kilowatt hour (kWh) per ton of Solid Waste.

The process extracts 100% of the heating value of the feedstock.

## Creating Syngas

Not Just Creating Heat

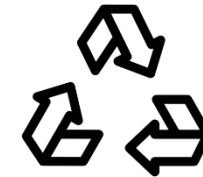


This fuel is converted to a usable Synthetic Gas, or Syngas, which inherently is converted to energy much more efficiently than incineration. Furthermore, Syngas can be used in production of chemicals such as ammonia, methanol and transportation fuels.

Raw material sources range from Municipal Solid Waste (MSW) to Solid Waste to Tires, which is processed into Refuse Derived Fuel (RDF), Solid Recovered Fuel (SDF), and Tire Derived Fuel (TDF).

## Environmental Profile

World's Only Paperclip Recycler



Incineration in typical WTE facilities directly and inefficiently converts Solid Waste into heat and generates about 20-25% ash. The eco-engineered design addresses this problem, wherein 100% of by-products have a beneficial reuse.

### Superior Recycling

- All ferrous and non-ferrous are recovered, down to individual paperclips and staples.
- All ash is beneficially reused as aggregate.
- All glass is crushed and reused in glass recycling facilities.



# RAILCAR SERVICES

We have earned a reputation in the market for quality, high level of expertise, and ability to handle complex cleaning jobs.

## locations

### Hockley, TX



### Fitzgerald, GA



### Victoria, TX



### Additional locations

- Houston, TX
- Orange, TX
- New Johnsonville, TN
- Memphis, TN
- Knox, IN,
- Geismar, LA
- York, PA
- Hopewell, VA

## services

### Cleaning, Repair, and Maintenance

specialty cleaning services for difficult-to-clean products, including chemicals, hardened materials, and pressurized gases, and comprehensive services for certified full-service repairs, tank car qualifications, and maintenance using the most environmentally friendly and safe processes in the industry along with railcar repair services.

Kosher cleaning and certification

- AAR certified in valve repair
- NACE lining inspections

### Railcar Cleaning Product Capabilities

We clean over 7,500 cars annually with 6,000 permitted products, such as:

- Hardened polymers and resins
- Ethylene Oxide. Hydrofluoric Acid, Chlorin

### Railcar Repair and Maintenance Capabilities

Top-to-bottom railcar repairs, heavy repairs, qualifications, exterior and interior painting of tank cars, pressure cars, and hopper cars :

- On-site Services and Mobile Repair Units
- Reconditioning of rail trucks, truck change-out
- Blasting, painting, high bake lines, tank car jackets, underframes
- Quality assurance certifications and NDT inspections



# MARINE services

We provide full-service Barge Fabrication, Repair, and Gas Free Services while operating 24 hours per day.

## locations

### Port Arthur, TX (Repair)



### Port Arthur, TX (Gas Free)



### Additional sites in Calcasieu, LA, and Sulphur, LA

## services

### Barge Cleaning and Repair

The property has 20+ acres, 1500' of bulkhead waterfront, and 12' water depth at the bulkhead. VLS Marine can service up to (12) 30k barges at one time.

- BIG JOHN drydock 280' x 92' x 8', 4500 ton capacity
- MISS JENNA drydock 240' x 80' x 8', 3500 ton capacity
- (3) Manitowoc Tower Cranes with 200' reach, 8 ton capacity

### Gas Free Services

Gas Free Services has 1500' of bulkhead waterfront with 12' water depth at bulkhead. VLS Gas Free can service up to (16) 30k barges at one time.

- Marine Vapor Control Unit
- LPG Flare
- Nitrogen Purging Strip
- Strip/Blow Dry, Hot/Cold Water Washing

### Industrial Services

VLS operates a full-service DOT fleet with tank wash facilities in Port Arthur, Texas, and Sulphur, Louisiana.



WASTE MANAGEMENT | RAILCAR SERVICES | MARINE SERVICES

[www.vlses.com](http://www.vlses.com) | 877.861.8588 | 19500 Hwy 249, Suite 440, Houston, TX 77070 | [info@vlses.com](mailto:info@vlses.com)