

## Milestone and the Energy-Waste Nexus



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#### ENERCOM 2021 | 2

# The Energy-Waste Nexus

Waste is a significant byproduct and externality of Old and New Energy

Old Energy



- Oil & Gas Scope 1-3 accounts for over 40% of GHG emissions globally
- Infrastructure to manage energy waste in continuous development

New Energy



- Even renewable power generates tons of waste
- Blades, batteries, and panels
- Some industries are impossible to decarbonize and will require CCS



**Global Emissions** 



# Milestone's Mission is to Clean Up Energy

Leveraging our core competencies to tackle meaningful CCS opportunities



Scaled, professionally managed network of energy waste management facilities with substantially carbon-negative footprint



Serving the largest domestic markets for energy supply



Employing the most environmentally beneficial methods on the planet



Leveraging our injection development/operations expertise and energy industry network to create a CCS-focused enterprise



## Milestone's Historical Focus Has Been Energy Waste

Our slurry injection and landfill facility footprint handles waste from across the oil and gas life cycle in an environmentally responsible manner



### **Common Energy Waste Management Methods** Not all are created equal





#### **Onsite Dumping**

- Reserve pits bury liquids and solid waste
- Landfarming tills the waste into the soil
- Waste remains above water table, likely contaminating soil and groundwater
- High percentage of hydrocarbons ultimately emitted
- Large land impact



#### Landfills

- Designed to handle dry solids only
- Reduced environmental impact versus municipal landfills that accept organic waste
- Sophisticated liner systems, leak protection, and groundwater monitoring
- Large land impact



#### Recycling and Oil Recovery

- Drill cuttings recycled as road base
- Requires energy intensive process
- Cost prohibitive to do properly
- Complexity to market/sell recycled cuttings as road base



#### **Slurry Injection**

- Liquids injected below the water table
- <u>Negative</u> carbon emissions
- No contamination risk
- Small land impact

### Land Application = Pollution

An outdated process with huge liability

- Substantial risk of contaminating groundwater
- Guaranteed to contaminate soil
- Guaranteed emissions
  - ~300 MT CO<sub>2</sub>e per new well

### Undisclosed Reserve Pits Turn Gated Community Into Brownfield

below were plugged and abandoned the reserve pit locations were never properly documented. 70 years later homeowners drilled personal water wells on their property unaware of the risk below.

After homeowners complained about metallic and briny tasting water an investigation was performed. The findings showed that reserve party ending in a confidential pits leached waste and the settlement with are residents.

aided in the movement of Though the wells seen contaminants to the aquifer, where it was drawn up by other wells. Subsequent investigations found widespread contamination to 100' below the surface.

gravel packed water wells

Homeowners argue that none of them had any way of knowing the poor water and soil quality prior to building or purchasing their homes. This resulted in a lawsuit brought against the primary responsible

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Reserve pits leached waste and the gravel packed water wells aided in the movement of contaminants to the aquifer.







### Waste Infrastructure No Longer a Barrier



Large network of professionally-managed energy waste sequestration facilities

- Millions spent building an infrastructure of facilities in Texas
- Facilities located within an average drive time of 36 minutes from the rig
- Streamlined process to efficiently scale: design, permit, construct, operate



## **Patented Slurry Injection = Secure Sequestration**



- Concrete containment
- Waste never touches the earth
- Minimal surface footprint

#### SUPERIOR CONSTRUCTION

- Double cased/cemented through all potential groundwater zones
- Disposal formation located over a mile deep
- Wells routinely inspected, cleaned, and maintained – exceed regulatory requirements



#### **EXCELLENT GEOLOGY**

#### Groundwater:

Usually 100-300 feet deep, protected by confining layers and surface construction

#### **Confining Layers:**

Thick layers of impermeable stone and shale keep waste confined to the injection zone, away from groundwater

#### **Disposal Zone:**

Extremely high permeability and porosity, over a mile deep. Formation extends laterally for miles

## Significant Environmental Benefits of Slurry Injection

Slurry injection reduces consumption of landfill airspace and safely sequesters waste in an environmentally conscious process that prevents biosphere exposure to harmful products

SURFACE AREA

#### CARBON SEQUESTERING

Helping Customers Achieve Net-Zero

Waste injection reduces carbon emitted into environment and liquids deposited in landfills





#### INJECTION CONSERVES AIRSPACE



650 million gallons of slurry injected per annum would fill a football field ~1,500 ft high

### **Drive to Net-Zero**



"Conoco Phillips sets net-zero 2050 goal while doubling down on oil and gas with \$10B acquisition."

Mark Segal, ESGToday

"Occidental Petroleum has become the first U.S. oil company to announce a plan to slash greenhouse gas emissions to netzero by 2050."

**Charles Kennedy, OilPrice.com** 

"We know that climate risk is investment risk. But we also believe the climate transition presents a historic investment opportunity."

Larry Fink, CEO Blackrock





The rules and regulations established by the Texas Railroad Commission decades ago were not designed for today's climate initiatives and were written when infrastructure didn't exist.

# **Compliance** ≠ **Net Zero**

### **Investors Can Make a Difference**

- Investor pressure has encouraged Net Zero Commitments, and increased scrutiny around less desirable environmental practices in the oilfield.
- Waste management decisions are quite often delegated to the field
- Dumping waste in the field to save truck miles is <u>not</u> consistent with ESG best practices



Finance

### Investment Giants Urge Texas to End Most Natural Gas Flaring

By <u>Kevin Crowley</u> September 4, 2020, 9:00 AM CDT Updated on September 4, 2020, 3:54 PM CDT

Just Ask the Question: What Are We Doing With Our Waste?



### **Carbon Capture and Sequestration** Transferrable Skills Lead to Competitive Advantages in CCS





Well-positioned to capitalize on the massive CCS market opportunity as an integral partner across the value chain

### Massive CCS Market Opportunity



### Integral Partner Across CCS Value Chain





Operations

"We expect the count of CCUS projects in early development will continue to grow rapidly in the coming years, as government and industry collaboration, government regulation and financing, and market pressures to move towards a net zero economy will all combine to push additional CCS projects into development."

- Evercore ISI, Carbon Capture is the Next Big Thing

### **Driving Progress to Net Zero**



## **Injection-Focused Organization Built for CCS**

Going concern with an "installed" human capital base and management systems designed for project development and execution

- Recently hired a senior executive with significant experience leading CCS projects for a supermajor
- Management team with proven ability to raise debt and equity capital through the cycle
- Supportive equity sponsor with existing equity commitment



Gabriel Rio President & CEO



Frank Schageman EVP & CFO



Kevin Matte SVP, Operations & HSE



Chris Davis VP, Carbon Sequestration



Shaun Gee VP, Business Development



Jason Larcher VP, Engineering



Richard Leaper VP, Sales & Marketing

# **Our Slurry Experience Translates Directly to Class VI**



Milestone's existing slurry injection business has strong parallels to CCS

CCS INJECTION (CLASS VI)  $\iff$  SLURRY INJECTION (CLASS II)







Energy CCS Investors:

**GHG** Source



Complete Geologic Sequestration



Slurry injection is a more complex geological and regulatory undertaking than pure CO<sub>2</sub> injection

## Transferrable Core Competencies Across UIC Classes



Drawing on our extensive slurry injection project experience

	Project Requirements	Slurry Injection (Class II)	CCS Injection (Class VI)	Core Competency?
Development	Geological Studies			$\checkmark$
	Complex Permitting Process			$\checkmark$
	Injection Rights			$\checkmark$
	Wellbore Design, Drilling & Completion			$\checkmark$
Operations	Operations & Safety			$\checkmark$
	Financial Management			$\checkmark$
	Government Relations			$\checkmark$
	Environmental Compliance & Reporting			$\checkmark$
	Capture, Compression & Transportation			

### Milestone's Role Within the CCS Value Chain

Unlocking value by aggregating smaller-scale, decentralized sources of CO<sub>2</sub>

Integral partner to infrastructure owners/operators + storage capacity owners



Early-Stage Capital and Risk Sharing



Project Development and Execution



Injection Ops Expertise

### **Our Project Targeting Framework**

Source	Capture	Transport	Store
Pure Source (low-cost capture)	Minimum Volume Threshold (economically feasible)	Proximate, Disparate, Decentralized, and Smaller-Scale	Pure Sequestration (no Usage/EOR)

## **Carbon Sequestration and Waste Management Partner**



Profitable, high-growth platform providing customers with protection and proven solutions to manage carbon impact and capture waste





- Carbon-reducing footprint
- Protects surface, land, and ground water



- Advantaged footprint
- Integrated solution (slurry and landfill)
- Blue-chip customer base



- EBITDA
- Margins
- FCF conversion
- Balance sheet
- Returns



### Milestone: Cleaning Up Energy A Unique and Critical Partner Through Energy Transition

www.milestone-es.com