



## Environmental Services

### Spotlight On:

#### Non-Hazardous Liquid Waste

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Demand for non-hazardous liquid waste management services is growing, spurred by environmental regulation, landfill diversion, and waste-to-energy initiatives, with waste recovery a driving theme. The industry is capturing the attention of private equity investment, illustrated by recent leveraged buyout and growth capital activity, underscoring a favorable near-term outlook and expectations of growth.

BGL and contributor The Boston Consulting Group examine trends driving growth in the U.S. wastewater market. Industry executives discuss the “state of the market” and provide insight into trends that are driving growth.

#### October 2017

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# Insider

A person wearing a dark blue work shirt is holding a small, white, speckled ceramic pot containing a green plant with long, thin leaves. The person's hands are visible, holding the pot from the bottom. The background is a dark, solid color.



*The Environmental Services Insider discusses valuation metrics, recent mergers and acquisitions and capital markets activity, and select sector commentary for BGL's core focus areas within the environmental services industry:*

- Solid Waste (Non-Hazardous)
- Special Waste (Hazardous as well as other non-traditional waste streams)
- Environmental Engineering & Consulting (EE&C)
- E-Waste & Metals Recycling
- Reclamation & Remediation
- Waste-to-Energy (WtE)
- Industrial Services
- Energy Services

*Feature spotlights present our views and views of the market on certain sectors gathered through primary research and industry-focused transaction expertise.*



## M&A and Capital Markets Activity

- Middle market<sup>1</sup> M&A activity slowed in 3Q 17, with deal volume declining 13.5 percent over 2Q 17 levels and deal value remaining flat. Year-to-date, transaction activity is down 11.5 percent with a corresponding 12.6 percent decline in deal value.
- Following three consecutive quarters of growth, Environmental Services transaction activity declined in 3Q 17. A total of 178 transactions were announced during the trailing twelve month period ended September, a decrease of 18.3 percent. While volume is down from the comparable period, the pace of deal flow remains steady, with participants reporting robust pipelines and armed with cash reserves earmarked for acquisitions.
- EE&C accounted for the largest volume of transactions in 3Q 17 (38 percent) and over the 12-month period (36 percent), with notable public targets in play, including CH2M Hill (Jacobs Engineering Group) and TRC Companies (New Mountain Capital).
- Special Waste accounted for a healthy 33 percent of third quarter volume and 29 percent of deal activity over the last twelve months. Deal flow remains robust with non-hazardous liquid waste companies the target of growing private equity interest, illustrated by the acquisition of large assets in the space, including Valicor (Wind Point Partners) and Wind River Environmental (Gryphon Investors) in 2017. Each has completed add-on acquisitions during the year.
- Solid Waste brought in 25 percent of deal flow during the quarter and 28 percent over the last 12 months. Corporates were acquisitive, with Republic Services (ReCommunity Holdings, announced August 2017), Waste Connections (Groot Industries, January 2017), and Advanced Disposal Services (CGS Services, February 2017) all completing buys over the last 12 months. Notable new financial sponsor platforms in Solid Waste include Frontier Waste Holdings (Blue Sage Capital, May 2017) and Five Star Carting (GPB Capital, January 2017). Several solid waste platforms gained new private equity backers, among them Waste Industries USA (HPS Investment Partners and Equity Group Investments) and Stella Environmental Holdings (Hidden Harbor Capital Partners), both announced in August 2017.
- Broadly, lenders cite tight supply dynamics as robust loan demand continues to outstrip volume of quality acquisition financing opportunities. Total leverage of 5.6x was reported in September for the broader middle market<sup>2</sup>, up from 5.1x in 2016, according to Standard & Poors Leveraged Commentary & Data (S&P LCD). In the lower middle market<sup>1</sup>, total leverage inched up to 4.84x, steadily increasing from a low of 4.57x in April.
- Median EBITDA multiples for strategic and financial buyers were 6.4x and 7.9x\*, respectively, on transactions valued than \$250 million, and 8.6x and 8.2x on transactions valued between \$250 and \$500 million.

\*August value due to limited number of observations in September.

<sup>1</sup> Middle market defined as enterprise values between \$25 million and \$500 million.  
<sup>2</sup> Issuers with EBITDA of \$50 million or less.



## Public Equity Markets

- The public equity markets have rallied with broader indices reaching record highs in October. Year-to-date, the S&P 500 and DJIA have gained with returns of 12.7 percent and 14.5 percent, respectively. BGL Environmental composite indices are outperforming the market over the same period, led by Diversified Special Waste with a 15.9 percent return and Vertically Integrated Solid Waste with 14.6 percent. Solid waste hauler Advanced Disposal Services (NYSE:ADSW) completed an IPO in October 2016 (IPO 10/5/2016) at an offering price of \$18 and has seen its stock price appreciate 35.7 percent.

*\*As of October 12, 2017.*

## Operating Highlights

- Public solid waste companies are reporting solid performance on volume and price growth and strengthening E&P waste activity. Operators are projecting continued growth with favorable trends expected to sustain momentum.
- Brent crude oil prices are forecasted to average \$52 per barrel (b) in 2017 and \$54/b in 2018, according to estimates reported in the October 2017 Short-Term Energy Outlook from the U.S. Energy Information Administration (EIA). The EIA is projecting record U.S. crude oil production in 2018 with a forecast of 9.9 million barrels per day (b/d). The previous high was recorded in 1970 at 9.6 million b/d.
- Regulation, stable end market demand, and economic expansion are among the drivers underpinning growth in the non-hazardous liquid waste management market. Acquisition activity has been robust as operators seek scale and cost efficiencies and look to boost topline growth.
- Public EE&C companies are reporting growth in most major end markets, with the exception of oil and gas, including public sector work which is up across federal, state and local clients. Customer, end market, and geographic diversification continue to support strong performance. Backlogs are at record levels, with environmental, power, and water management cited among the areas of growth.

*Source: S&P Capital IQ, Waste360, U.S. Energy Information Administration, Equity Research, and public data.*

For more information on how BGL's Global Environmental and Industrial Services Practice can assist your company, please contact:

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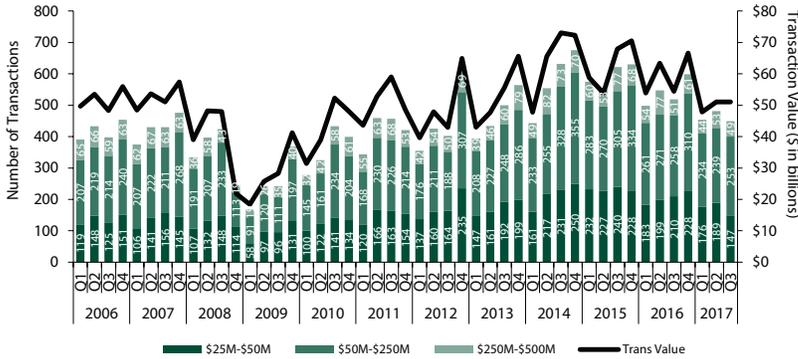




# Environmental Services Insider Mergers & Acquisitions Overall M&A Activity

## Mergers & Acquisitions Activity

### Middle Market M&A Activity

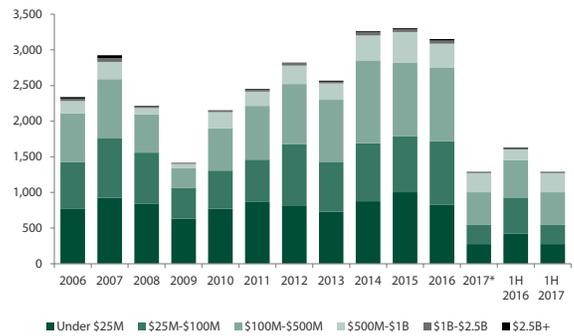


Based on announced deals, where the primary location of the target is in the United States. Middle market enterprise values between \$25 million and \$500 million.

SOURCE: S&P Capital IQ.

### Private Equity Transaction Activity

Transaction Count by Deal Size

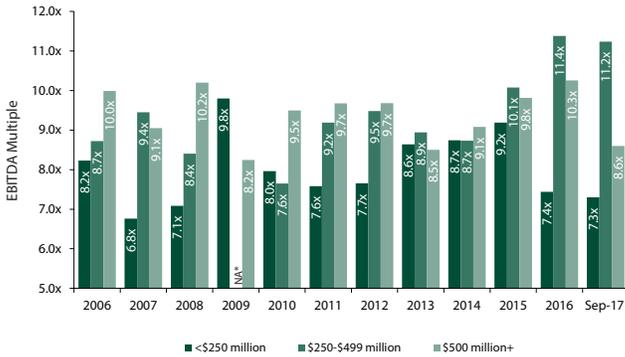


NOTE: Buyout activity only  
\*Through June 30, 2017

SOURCE: PitchBook.

## Trends in Valuation

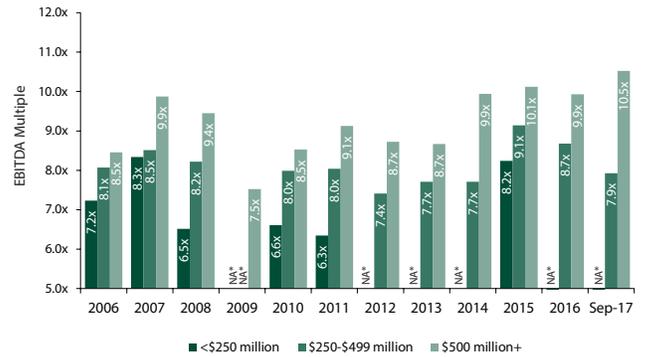
### Transactions with Strategic Buyers



\*NA: Data not reported due to limited number of observations for period.

SOURCE: Standard & Poors LCD.

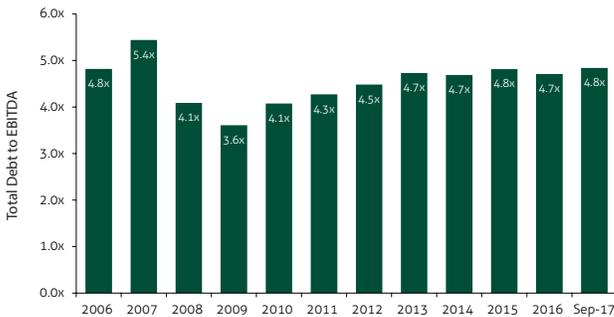
### Transactions with Financial Buyers



\*NA: Data not reported due to limited number of observations for period.

## Acquisition Financing Trends

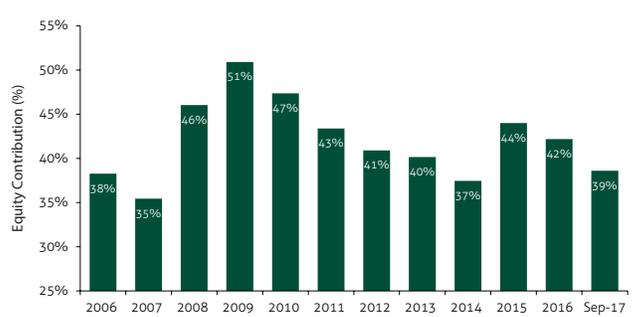
### Total Leverage



Middle market enterprise values between \$25 million and \$500 million.

SOURCE: Standard & Poors LCD.

### Equity Contribution



Middle market enterprise values between \$25 million and \$500 million.

SOURCE: Standard & Poors LCD.



# Environmental Services Insider Mergers & Acquisitions Environmental Services M&A Activity

## Notable M&A Activity in Solid Waste

### SOLID WASTE

In August 2017, **Republic Services** (NYSE: RSG) announced it was acquiring **ReCommunity Holdings**. The acquisition is expected to significantly boost Republic's recycling capacity, adding 26 recycling centers in 14 states and strengthening its geographic footprint in the eastern United States. ReCommunity positions itself as the largest independent recycler in the U.S., recovering an estimated 1.6 million tons of recyclables annually. This compares to Republic's 64 recycling facilities nationwide which recover 2.5 million tons of recyclable commodities per year.

Commenting on the acquisition, Republic CEO Don Slager, said, "We believe this transaction will enable us to meet growing customer demand for recycling services, while achieving one of our key sustainability goals. Recycling continues to be one of the fastest growing segments of the waste stream, and our focus remains on investing in traditional recycling in select and prioritized markets where customers have demonstrated both a demand and a willingness to pay for recycling."

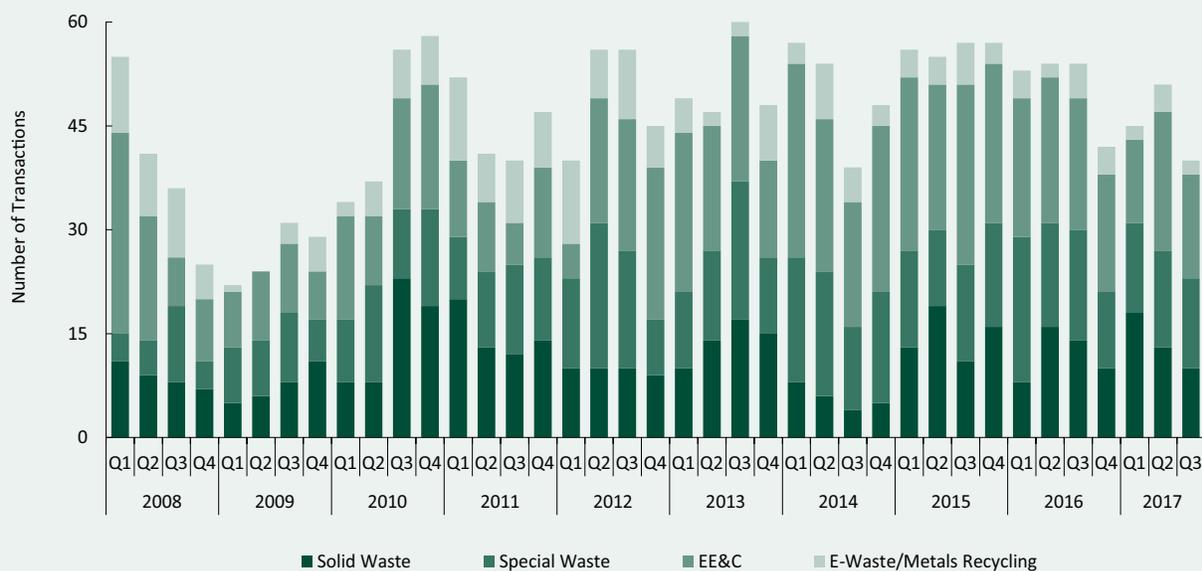
ReCommunity was formed in 2011 with the acquisition of certain recycling assets of Casella Waste Systems (NASDAQ: CWST). Pegasus Capital Advisors led the \$134.1 million buyout with participation from an investor group comprised of Intersection Partners, MissionPoint Capital Partners, HarbourVest Partners, Harvey & Company, Seacoast Capital partners, and Ares Capital.

In August 2017, **HPS Investment Partners** and **Equity Group Investments** agreed to acquire **Waste Industries USA** from **Macquarie Infrastructure Partners** and **Goldman Sachs**. Founded in 1970, Waste Industries is a regional provider of non-hazardous solid waste collection, transfer, recycling, and disposal services. The company currently operates in North Carolina, South Carolina, Georgia, Tennessee, Virginia, Maryland, and Delaware and employs roughly 2,500 people. Waste Industries completed tuck-in acquisitions of Econo-Haul in January 2017 and Cardinal Waste Solutions in November 2016.

In August 2017, **Hidden Harbor Capital Partners** completed the acquisition of **Stella Environmental Holdings**, a division of **Action Resources**. Headquartered in Houston, Texas, Stella Environmental Holdings provides outsourced transfer

### Historical Environmental Services M&A Activity

Quarterly M&A Activity by Sector



Based on announced deals, where the primary location of the target is in the United States.  
Source: S&P Capital IQ, mergermarket, PitchBook, and BGL Research.



# Environmental Services Insider Mergers & Acquisitions Environmental Services M&A Activity

## Notable M&A Activity in Solid Waste

### SOLID WASTE (continued)

station management, hauling, and loading services to municipal solid waste and transportation customers across various states. “Stella is eager to partner with Hidden Harbor, which will bring the resources and capital to continue our strong record of performance and support our next phase of growth,” said Wilfred Roth, CEO of Stella. Chris Paldino, a Founding Partner at Hidden Harbor, commented on the transaction: “Stella has positioned itself as the preferred service provider in its core markets, with a reputation for delivering exceptional service, quality, and results to its customers. We are excited about Stella’s prospects for continued growth and geographical expansion.”

**Santek Waste Services** has completed several tuck-in acquisitions in the last 12 months, furthering its strategy to build upon the company’s growing footprint in the Northeast Houston, North Atlanta, and Birmingham markets:

August 2017 – Acquired hauler **Enviro Waste Systems** serving residential, commercial, and industrial customers in Conroe, Texas

March 2017 – Acquired **Bates Sanitation**, adding residential customers in Cherokee County, Georgia

March 2017 – Acquired **Major Waste Services**, adding residential customers in Montgomery and San Jacinto counties, Texas

February 2017 – Acquired **Picklesimer Garbage Services** based in Jasper, Georgia, adding residential waste customers in Cherokee and Pickens counties

October 2016 – Acquired **North Metro Waste** of Ball Ground, Georgia, adding commercial and residential customers in Bartow, Cherokee, Pickens, and Gordon counties, Georgia

August 2016 – Acquired **Riverside Waste Services** in Splendora, Texas

June 2016 – Acquired **Blount Waste** in Hayden, Alabama, a residential hauler serving the Birmingham market.

In June 2017, **Five Star Carting** completed two tuck-in acquisitions with the purchase of **Joe Morea & Sons Private Sanitation** and **Staten Island Carting**, moves to boost its share of the residential hauling market in New York City. Five Star Carting is a portfolio company of GPB Capital which it acquired in January 2017.

Founded in 1982, **Joe Morea & Sons** provides municipal solid waste and cardboard hauling services in Brooklyn, New York, and surrounding areas. The transaction is expected to generate cost savings through route synergies and the consolidation of workers’ compensation insurance and fleet insurance.

**Staten Island Carting** operates five trucks in Staten Island, New York, and processes 815 tons of municipal solid waste and 165 tons of recyclables each month. The investment will facilitate the transition to front-end loading trucks which is expected to reduce operational costs. “The acquisitions of these established, income-producing companies serve as a vital next step toward our goal to strengthen our presence in the New York City waste management sector and become a larger acquirer in this space,” said David Gentile, Founder and CEO of GPB Capital. “We are eager to partner with the proven management teams at Joe Morea & Sons and Staten Island Carting to continue to enhance the waste management services we can provide to communities in New York City and beyond.”

In May 2017, **Blue Sage Capital** announced the formation of **Frontier Waste Holdings**, a provider of solid waste services to the municipal, residential, commercial, and industrial markets, in partnership John Gustafson and Trailcreek Capital Group. The initial Frontier platform includes the acquisitions of **Access Disposal Services**, serving Hillsboro, Texas and the market area between Waco and Ft. Worth, Texas, and **K2 Waste Solutions**, servicing the market areas around Corpus Christi and Liberty County, Texas. Industry veteran John Gustafson, a former senior executive from Progressive Waste Solutions and IESI, will lead Frontier as CEO. Frontier is seeking additional acquisitions with Texas in focus, according to a Blue Sage statement. Blue Sage Co-Founder Peter Huff, commented, “We are excited to partner with John Gustafson and Trailcreek to form Frontier. John’s previous roles highlight his ability to build and grow a successful waste services business, and the team he put together has the experience and talent to help execute on our plans for Frontier’s growth.”

In April 2017, **Waste Harmonics** completed the acquisitions of **SetWest Leasing and Rental Corp.** and **Eco2Go Recycling Solutions**. Eco2Go offers a mail-back recycling program for companies with low-volume recycling needs, serving to divert recoverable recyclables from the waste stream. The acquisition adds “...another great tool in our growing arsenal of sustainability services that help businesses of all sizes ‘be green’”, said Waste Harmonics CEO Michael Hess in a press release. SetWest is a waste management rental equipment provider, servicing a variety of private and public companies in the eastern United States. The May 2016 recapitalization of Victor, New York-based Waste Harmonics was led by Prospect Partners and Expedition Capital Partners in partnership with management. “Waste Harmonics is committed to delivering innovative and cost-effective ways for companies nationwide to address a range of waste management concerns,” Hess added.



# Environmental Services Insider Mergers & Acquisitions Environmental Services M&A Activity

## Notable M&A Activity in Solid Waste

### SOLID WASTE (continued)

In March 2017, **Charterhouse Equity Partners** completed the sale of Charter Waste Management d/b/a **RiverRoad Waste Solutions** (RiverRoad) to **Navesink Management Investments** (NMI), an entity formed through a management buyout led by Kris Bunnell, CEO of RiverRoad and Managing Partner of NMI. RiverRoad is an asset-light, technology-enabled provider of outsourced waste, recycling, and sustainability solutions. The company services over 18,000 locations across the U.S. for its broad group of geographically diverse, multi-location retail, commercial, distribution, restaurant, and hospitality customers. BGL's Environmental & Industrial Services team served as the exclusive financial advisor to RiverRoad in the transaction.

In February 2017, **Advanced Disposal Services** (NYSE: ADSW) completed the acquisition of **CGS Services**, a Morristown, Indiana-based waste hauler servicing a 14 county area in central and eastern Indiana. The vertically-integrated operator provides solid waste collection, recycling, and disposal services and generates annual revenue approaching \$30 million. The acquisition provides an entry to a new Indiana market, according to a company statement. "CGS is an established operation in a secondary market that fits perfectly with our market selection strategy and gives us a new platform to continue to grow our business," stated Richard Burke, chief executive officer of Advanced Disposal. The transaction follows the September 2016 purchase of **West Mobile Sanitation** of Mobile, Alabama. Advanced Disposal acquired West Mobile Sanitation's residential customers in the acquisition.

In February 2017, **Meridian Waste Solutions** (NasdaqCM:MRDN) acquired **The CFS Group**, **The CFS Group Disposal & Recycling Services**, and **RWG5** in a transaction valued at \$42.1 million. The CFS Group services more than 30,000 commercial, industrial, and residential customers in the Richmond, Virginia market area. The company operates two municipal solid waste landfills, one transfer station, and one recycling facility all located within central Virginia. The acquisition marks Meridian's entry to Virginia and the company's first acquisition outside of Missouri.

### Transaction Multiples: 2.0x Revenue

In January 2017, **Lakeshore Recycling Systems** (LRS) acquired **K. Hoving Companies**, a full-service waste management, recycling, and dumpster rental company based in West Chicago, Illinois. With the acquisition, LRS will operate seven material recovery facilities (MRFs) throughout Chicagoland and Illinois, increasing annual revenues to nearly \$170 million and workforce to over 720 full-time employees.

"This milestone acquisition strengthens the LRS operations and service footprint in DuPage County and positions us well for continued growth in the competitive Chicagoland waste and recycling market," says Lakeshore Recycling Systems CEO Alan T. Handley. Lakeshore Recycling Systems received a minority equity investment from Tensile Capital Management in December 2012.

In January 2017, **Waste Connections** (NYSE:WCN) completed the acquisition of **Groot Industries** (Groot). Founded in 1914, Groot is the largest privately-owned solid waste services company in Illinois with total annual revenue of approximately \$200 million. Groot serves approximately 300,000 customers primarily in northern Illinois from a network of six collection operations, six transfer stations, and two recycling facilities. "Groot is one of the most respected and best-in-class companies in our industry. With a majority of its operations contiguous to the Rock River assets we acquired in November 2015, Groot solidifies our leading position in these markets, increases potential internalization benefits of their disposal volumes into our existing landfills, and further expands our platform for additional growth opportunities," Waste Connections Chairman and CEO Ronald J. Mittelstaedt said in a statement. BGL's Environmental & Industrial Services team served as the financial advisor to Groot in the transaction.

In September 2016, **GFL Environmental** completed the acquisition of **Rizzo Environmental Services** (Rizzo) from **Kinderhook Industries**. Founded in 1988 and headquartered in Sterling Heights, Michigan, Rizzo offers municipal, commercial, and industrial solid waste collection and commercial recycling processing and brokerage. The company currently provides collection services to more than 40 municipalities in Southeastern Michigan. Rizzo's operations include three commercial recycling facilities serving customers in southern Michigan and northern Ohio. The current management team, led by Chuck Rizzo, Jr. will remain with the company. "Rizzo Environmental is a natural fit, both geographically and culturally, for GFL's plans to grow the GFL brand into the United States," said GFL CEO Patrick Dovigi. "We expect Rizzo Environmental to serve as a foundation from which GFL can continue its growth strategy into the Midwestern U.S. through both acquisitions and organic growth."

### SPECIAL WASTE

In August 2017, **Quala** acquired **Alpha Technical Services** (ATS), expanding its railcar and specialty cleaning capabilities in the Gulf Coast region. Pasadena, Texas-based ATS provides industrial container cleaning services



# Environmental Services Insider Mergers & Acquisitions Environmental Services M&A Activity

## Notable M&A Activity in Special Waste

### SPECIAL WASTE (continued)

specializing in railcars, tank trailers, and ISO containers. The company also operates full-service railcar maintenance and environmental service divisions. Mike Bauer, Quala CEO, commented: “ATS is the perfect catalyst to support Quala in expanding our railcar service model, as we further our vision to become a more diversified container cleaning company, serving the petrochemical industry.” In August 2016, Advent International acquired Quala from Roark Capital, which exited its five-year investment in the sale. Quala’s network of tank wash and wastewater treatment facilities encompasses more than 60 locations in the U.S. and Canada.

In July 2017, **Wind River Environmental** (WRE) completed the acquisitions of **Soucy’s Septic Service** and **Drain Pro**. Based in Salem, New Hampshire, Soucy’s provides septic tank services to residential and commercial customers in Southern New Hampshire and Northern Massachusetts. Drain Pro, dba Plumb Crazy, will increase WRE’s service delivery capabilities in Southern New Hampshire.

**Gryphon Investors** made a majority investment in WRE in April 2017. Based in Marlborough, Massachusetts, WRE is a leading vertically integrated provider of non-hazardous liquid environmental waste solutions serving residential, commercial, and municipal customers. Services include septic services, grease trap services, and drain line cleaning. The company’s geographic footprint extends through the Northeast, Tri-state, and Mid-Atlantic region. With more than 25 locations, Wind River serviced 25,000 commercial and 52,000 residential sites in 2016. BGL’s Environmental & Industrial Services team served as a financial advisor to Gryphon Investors in the transaction.

WRE has been actively consolidating the industry, having completed more than 60 acquisitions to broaden its capabilities and geographic reach. Other notable strategic acquisitions added regional brands to WRE’s service network, among them Residual Management Services and EarthCare in 2009; Kaiser-Battistone in 2014; and Kline’s Services in 2015.

Gryphon stated plans to support WRE’s continued growth “...both organically and through acquisitions,” according to Partner Alex Earls. Gryphon Partner Phil Petrocelli, added, “We are highly enthusiastic about providing capital and expertise to Wind River’s management team as they continue to build this market-leading platform through the execution of organic initiatives and add-on acquisitions.”

WRE has a long history of private equity sponsorship dating back to 1999. RFE Investment Partners led a buyout of the company in 2014. Cedar Lake, Centre Partners Management, and Housatonic Partners were early investors in the company.

In August 2017, **PSC Industrial Outsourcing**, a portfolio company of **Littlejohn & Co.**, agreed to acquire **Aquilex Holdings**, owner of HydroChem and a portfolio company of Centerbridge Partners, combining PSC and HydroChem. HydroChem provides industrial cleaning solutions to the petrochemical production, oil refining, and other energy end markets. The company’s core services include hydroblasting, industrial vacuuming, chemical cleaning, tank cleaning, and paint booth management services. PSC provides specialty maintenance services and technology solutions to the critical energy infrastructure in the United States. “This combination will provide our customers with the safest and most efficient operating experience, and ensure our employees receive the most comprehensive training and career development opportunities,” said Brad Clark, PSC CEO and President of the combined company. “PSC and HydroChem both share rich histories, a strong commitment to our people and deep values that promote safety, craft apprenticeship and collaboration.”

In July 2017, **Clean Harbors** (NYSE:CLH) acquired the outstanding shares of **LoneStar West** (TSX.V:LSI) in an all-cash transaction valued at \$33.2 million. LoneStar provides services for drilling operations, oil sands projects, plant maintenance, as well as commercial, municipal, and civil projects. LoneStar has more than 160 employees and maintains a network of 12 operating centers in key areas throughout Canada and the United States. With the acquisition of LoneStar, Clean Harbors expects to accelerate growth in the daylighting and hydro excavation services markets, according to CEO Alan McKim, “In addition to essentially doubling the size of our hydro vac fleet, Lonestar’s network of locations will provide us with direct access to key geographic markets in both the United States and Canada. Given its attractiveness as a safe and cost-effective alternative to traditional excavation methods, we believe that the daylighting marketplace represents an outstanding multi-year growth opportunity.” **Transaction Multiple: 1.1x Revenue**

In July 2017, **Audax Private Equity** completed the purchase of **EnviroVac** from **RLJ Equity Partners**. Savannah, Georgia-based EnviroVac provides industrial cleaning and maintenance services to customers in the power and utilities, pulp and paper, chemical, steel, and manufacturing



## Environmental Services Insider Mergers & Acquisitions Environmental Services M&A Activity

### Notable M&A Activity in Special Waste

#### SPECIAL WASTE (continued)

industries. The company operates facilities in 10 states across the Southeast, Mid-Atlantic, and Gulf Coast. Speaking to the new partnership, EnviroVac CEO Kevin Jackson, said, “Partnering with Audax provides access to a broad range of resources, enabling EnviroVac to reach new heights in the industrial cleaning industry, grow into new market segments and service lines, and complete additional strategic acquisitions.” “EnviroVac is a leader in the industrial cleaning industry. We are excited to partner with Kevin Jackson and the rest of the EnviroVac team and support them in this next phase of growth,” said Audax Co-CEO Geoffrey Rehnert, commenting on the investment.

In July 2017, **Bain Capital Double Impact** acquired **Living Earth**, a leading recycler of organic landscaping materials in Texas. The Dallas-based company processes organic waste materials into compost, mulch, and soil products, which is then sold to landscape contractors, nurseries, retailers, and homeowners. Living Earth was founded in 1985. “We believe there are attractive opportunities to expand Living Earth’s reach given their approach to reducing landfill waste and doing so in a more energy and resource efficient way,” said Deval Patrick, Managing Director at Bain Capital Double Impact. “Our Living Earth management team is very excited to launch this new partnership and we believe Bain Capital Double Impact’s financial and operational strength will help us rapidly grow our business,” said Living Earth CEO Mark Rose. “This investment will support our accelerated growth and allows our upcoming entry into new markets around the U.S.” **SJF Ventures** also participated in the investment.

In June 2017, **Rosewood Private Investments**, a subsidiary of **The Rosewood Corporation**, completed the recapitalization of **Superior Environmental Solutions (SES)**. Founded in 1999 and headquartered in Cincinnati, Ohio, SES provides a comprehensive suite of critical routine and turnaround services in the Midwest, including industrial vacuum cleaning, waterblasting, pressure washing, emergency response, waste transportation and disposal, and hydroexcavation. The company serves its customers locally from 13 facilities across Ohio, Indiana, Kentucky, Pennsylvania, and Michigan. BGL’s Environmental & Industrial Services team served as the exclusive financial advisor to SES in the transaction.

In June 2017, an investment affiliate of **J.F. Lehman & Company (JFLCO)** recapitalized **NorthStar Group Services**, in partnership with **Medley Capital Corporation**. NorthStar is a national provider of environmental and technical solutions to the commercial and government markets. Turnkey facility

services include abatement, demolition, decommissioning, emergency and disaster response, and site redevelopment. The company employs more than 4,500 people and generates annual sales in excess of \$600 million.

Commenting on the investment, JFLCO Partner Alex Harman, said, “NorthStar has a sterling reputation in its core markets, providing high quality environmental and technical services across a wide array of end markets throughout the United States. They have coupled this leading market position with several near-term growth opportunities that we are excited to partner with the senior management team to pursue.” “JFLCO’s recapitalization of our company will enable NorthStar to fully pursue business opportunities which the management team has laid the foundation for over the past several years,” stated NorthStar CEO Scott State. “NorthStar will have the resources, capital structure, and operational resources to support our long term priorities and growth plans—enabling a superior offering that will be well received by our customers and employees alike.”

In June 2017, **Wind Point Partners (WPP)** acquired Middletown, Ohio-based **Valicor Environmental Services**, a leading provider of non-hazardous wastewater treatment services in North America. The company operates a network of centralized wastewater treatment (CWT) facilities that service more than 3,000 customers across the Midwest. Diverse wastewater streams processed include oily water, leachate, soaps, line flush waste, and similar waste streams. WPP partnered with industry veteran James Devlin, a former executive at ReCommunity and Thermo Fluids, in the transaction. Devlin will lead Valicor as CEO. Antares Capital, Carlyle Private Credit, and Northwestern Mutual Capital provided the financing for the deal.

In June 2017, **Denali Water Solutions** completed the acquisition of **WeCare Organics**, a leader in managing solid separated organics or food waste being removed from municipal trash. The combined company will operate under the name Denali Water Solutions and WeCare Denali but will continue to promote their compost under the WeCare Organics brands. Commenting on the transaction, Jeff LeBlanc, the former CEO of WeCare and now the President of Denali North America, said “the focus and structure of the combined entity will allow us the opportunity to strategically align with industry technology providers and play a pivotal role enacting change within the industry.”

In May 2017, **TAS Environmental Services** acquired **Water Kleen Services**, an Ennis, Texas-based provider of environmental and industrial services, including



# Environmental Services Insider Mergers & Acquisitions Environmental Services M&A Activity

## Notable M&A Activity in EE&C

### SPECIAL WASTE (continued)

hydroblasting, vacuum truck services, hydroexcavating, hydrojetting, and roll off truck services. The company operates primarily in Dallas/Fort Worth Metroplex, but also works throughout Texas, Oklahoma, Louisiana, and Arkansas. TAS has been backed by TEAM Partners, Advantage Capital Partners, and Stonehenge Capital Company since 2012. As part of the Water Kleen acquisition, TAS refinanced its capital structure with ORIX Mezzanine & Private Equity and Dallas Capital Bank.

David Mann, managing partner of TEAM Partners, commented on the buy: "The Water Kleen acquisition provides a tremendous catalyst to continue to grow TAS through an active buy-and-build effort. We have a strong appetite for future growth and will continue to look for additional acquisitions and new locations to enhance and expand our footprint."

**Tradebe Environmental Services** completed the acquisitions of **First Response Environmental Group (FREG)** in April 2017 and **Badger Disposal** in March 2017. FREG offers emergency response, industrial services, remediation, demolition and abatement, and non-hazardous wastewater treatment in the Southeastern United States. The company's wastewater treatment facility, formerly Clearwater Environmental, will become Tradebe Treatment and Recycling of Nashville. "The acquisition will leverage the combined expertise of Tradebe and FREG to provide significant opportunities to serve our combined business in the Southeastern U.S.," said Victor Creixell, CEO of Tradebe U.S.

Badger Disposal operates a fully permitted hazardous waste treatment, storage, and disposal facility, (TSDf) located in Milwaukee, Wisconsin. The business was renamed Tradebe Treatment and Recycling of Wisconsin. "This acquisition further expands Tradebe's treatment facility network to provide improved efficiency in the services we provide to our clients in the Midwest and beyond", Creixell said.

In February 2017, **Altus Capital Partners** acquired **MAX Environmental Technologies** in partnership with industry veteran Bob Shawver. Shawver will lead MAX as CEO. Founded in 1957 and headquartered in Pittsburgh, Pennsylvania, MAX is a fully integrated environmental treatment and disposal company that provides hazardous and non-hazardous waste transportation, processing, and disposal, as well as beneficial reuse of industrial and drilling waste materials to energy production, midstream, and energy service businesses. Altus Partner, Heidi Goldstein,

commented, "We are excited to partner with Bob and his management team in executing its growth plan for MAX Environmental. We look forward to working with and supporting them as they strive to create a premier provider of environmental and waste management solutions."

In January 2017, **ORIX Capital Partners** acquired **Hoffman Southwest Corp. (HSW)** from **Sterling Partners**. Hoffman Southwest provides underground pipe inspection, trenchless pipe repair, excavation, and cleaning services for municipal and utility customers under the Pro-Pipe brand. The company is also the largest franchisee of Roto-Rooter, a provider of plumbing and drain cleaning services in North America. Hoffman Southwest operates 12 Roto-Rooter branches in California, Arizona, Utah, Oregon, and Texas. HSW's management team, led by CEO Mark Burel, will remain with the company. "Our country's aging infrastructure will drive enormous demand for underground infrastructure risk mitigation as municipalities and utilities work to ensure our pipes are functioning safely and properly for the public," said Terry Suzuki, President and CEO at ORIX Capital Partners. "We will seek strategic add-ons which will complement HSW's historically strong organic growth and support Burel's team in building a long-standing legacy, known for customer-focused service, safety, technology, and industry leading insights and initiatives."

### ENVIRONMENTAL ENGINEERING & CONSULTING

In October 2017, **Tetra Tech** (NasdaqGS: TTEK) acquired **Glumac**, an infrastructure design firm specializing in sustainability services, building engineering, and energy analysis. Glumac employs more than 300 professionals from 11 U.S. offices located in California, Oregon, and Washington and one in Shanghai. Commenting on the acquisition, Tetra Tech CEO Dan Batrack, said: "Our clients, now, more than ever, are looking for sustainable solutions to their infrastructure needs. With the addition of Glumac, Tetra Tech can offer additional technically differentiated green infrastructure capabilities to our customers that not only conserve resources, but also reduce their operating costs."

In August 2017, **Jacobs Engineering Group** (NYSE:JEC) agreed to acquire all of the outstanding shares of Englewood, Colorado-based **CH2M Hill Companies** in a cash and stock transaction valued at approximately \$3.2 billion. CH2M Hill provides consulting, design, engineering, operations, maintenance, and program management services for clients needing solutions in environmental, industrial and advanced facilities, transportation, and water. With the acquisition, Jacobs will expand its global footprint in the transportation, water, nuclear, and environmental

SOURCE: S&P Capital IQ, PitchBook, Waste 360, Recycling Today, Equity Research, and Company Filings.



# Environmental Services Insider Mergers & Acquisitions Environmental Services M&A Activity

## Notable M&A Activity in EE&C

### ENVIRONMENTAL ENGINEERING & CONSULTING (continued)

sectors, as well as in the petroleum and chemical industry. “By increasing our industry reach and adding to our already extensive skills, this transaction enhances our value to our clients and bolsters Jacobs’ position as a premier consulting, design, engineering, construction, and operations and maintenance technical services firm,” said Jacobs CEO Steve Demetriou. CH2M Hill received \$299 million in development capital from Apollo Global Management (NYSE: APO) in 2015. **Transaction Multiple: .6x Revenue**

In July 2017, **Woodlawn Partners** and **Peninsula Capital Partners** acquired environmental engineering, consulting, and remediation design firm **Environmental Forensic Investigations (EnviroForensics)**. The company is headquartered in Indianapolis, Indiana, and operates additional offices in Wisconsin and Kentucky. Commenting on the new partnership, EnviroForensics President Nancy Shields, said: “This acquisition will provide tremendous opportunity to our employees as we continue to grow and expand geographically. We have identified strategic growth potential in new markets that are searching for creative strategies to resolve the problems of cleanup and redevelopment of contaminated brownfield sites and blighted urban properties.” Steve Henshaw, EnviroForensics CEO, expects the partnership “will provide a depth of experience to help strengthen market share in at home and as we expand into new regional markets.” EnviroForensics is reporting strong growth, having achieved annual revenue growth in excess of 20 percent since 2010. The company is looking to double revenues and profit over the next five years, according to Shields.

In June 2017, **New Mountain Capital** completed the acquisition of **TRC Companies** (NYSE:TRC) in an all-cash transaction valued at \$681.3 million. TRC provides integrated engineering, consulting, and construction management services to a broad range of commercial, industrial, and government clients. Matt Holt of New Mountain Capital commented on the investment, “New Mountain identified the infrastructure services sector for prospective investment many years ago, and we believe it is a highly attractive industry with significant growth potential. We have been methodically studying the market for opportunities, and we selected TRC as the ideal platform to build a differentiated leader across the Power, Environmental, Energy and Transportation verticals.” **Transaction Multiples: 1.3x Revenue and 13.9x EBITDA**

In October 2016, **ATC Group Services** completed the acquisition of **Environmental Compliance Services (ECS)**. The Agawam, Massachusetts-based company provides environmental consulting, site remediation, and regulatory compliance services with a focus on the retail petroleum market. ECS employs more than 250 professionals from 27 offices in 15 states. With the acquisition, ATC expands its team to more 1,900 employees in 115 locations. ATC Group Services has been backed by private equity sponsor **Bernhard Capital Partners** since 2015. ECS is the third add-on acquisition for the platform, following **Dexter Field Services** and **Sage Environmental Consulting** in April 2016.

In October 2016, **Trinity Consultants** acquired **Jim Clary and Associates (JCA)**, a Dallas, Texas-based environmental consulting firm that specializes in air quality permitting and compliance consulting firm with a focus in the power sector. Trinity is a portfolio company of **Levine Leichtman Capital Partners**, which it acquired in 2015. Shishir Mohan, Trinity’s Gulf and Southwest Managing Director, commented on the acquisition, “JCA is a perfect fit with Trinity given our mutual focus on air quality regulations and permitting requirements. Jim (Clary) and his staff have particular strength in the electric utility sector, an area of growth for Trinity.” Jim Clary is Trinity’s fifth add-on acquisition over a long history of private equity ownership. Its last acquisition was Minnow Environmental in July 2015 with former investor **Gryphon Investors**.

### E-WASTE & METALS RECYCLING

In August 2017, **Metro Group** acquired the assets of **Allied Metals** of Ogden, Utah. Founded in 1947, Allied Metals is a full-service ferrous and nonferrous metals recycler. The acquisition strengthens Metro’s footprint in the northern Utah. The acquisition follows the January purchase of North American Recycling, a full-service processor of ferrous and nonferrous scrap specializing in industrial and commercial markets. The company serves southwestern Idaho and eastern Oregon, deepening Alter’s footprint in the Northwest U.S. Metro Group has eight facilities throughout Utah, Nevada, and Idaho and a trading office in Missouri, reported Recycling Today. Metro also acquired St. Louis-based **Arrow Metals Trading** in September 2016.

In June 2017, **Amlon Environmental Services** acquired a majority stake in Texas recycler **Alpha Omega Recycling**. Alpha Omega operates a RCRA Licensed and HSM approved full-service recycling facility located in Longview, Texas. The facility recycles metals from waste products, including



## Environmental Services Insider Mergers & Acquisitions Environmental Services M&A Activity

### Notable M&A Activity in E-Waste & Metals Recycling

#### E-WASTE & METALS RECYCLING (continued)

slag and spent catalysts. Lee Lasher, CEO of Amlon Environmental Services LLC commented, “We are extremely excited to complete this acquisition and can now offer our customers direct processing and recycling services. With the combination, Amlon is... positioned to offer industry a robust recycling platform and reclamation programs that...are the best available bar none. This is a game changer.” Amlon Environmental is part of New York-based **Amlon Resources Group**.

In May 2017, **Alter Trading Corporation** acquired the assets of **Harris Silver & Sons**, a Belvedere, Illinois-based metals recycler, expanding Alter’s footprint in the Midwest. The transaction follows the October 2016 purchase of Rockford, Illinois-based metals recycler Behr Iron & Metal, which added nine facilities in Illinois, Iowa, and Wisconsin, including three shredding operations and a specialty metals operation, reported Recycling Today. The Behr acquisition represents a “significant strategic addition to Alter,” Alter COO Jay Robinovitz told Recycling Today, “Their geographic footprint, processing capabilities, and customer base all dovetail well with Alter’s existing operations.”

In March 2017, **Commercial Metals Company** (NYSE:CMC) completed the acquisition of **seven recycling facilities from OmniSource Corporation**, a wholly owned subsidiary of **Steel Dynamics, Inc.** (NasdaqGS:STLD). The facilities are located in the southeastern U.S. and process ferrous and non-ferrous scrap throughout the region, according to a CMC press release announcing the transaction in January. “..the acquisition of these facilities continues CMC’s focus on supporting our mill operations with a reliable, low cost source of raw material. These locations will support our Cayce, South Carolina minimill and we expect to realize synergies with our existing operations in the region,” commented Tracy Porter, executive vice president of CMC Operations.

In February 2017, **Columbus Recycling** completed the acquisition of **Freedom Metals**, a Kentucky-based industrial metals recycler with four locations, growing its footprint to nine locations in three states (MS, TN, KY). Freedom’s customers are primarily located in the southeastern United States and include manufacturers and Tier I and Tier II suppliers to OEMs, steel mills, and service centers. The company’s annual processing volume approximates 200,000 tons. Freedom was founded in 1983 and is based in Louisville, Kentucky. “We are extremely excited to be establishing a stronger presence in Kentucky with Freedom,” said Columbus President Rob Craig. “We have big plans for this market, and Freedom is just the beginning. Our goal is to continue the implementation of our growth strategy, both through an active pursuit of organic expansion and value-added acquisition opportunities.” Columbus Recycling has been backed by **Trivest Partners** and **Castle Crow & Company** since 2014.

In November 2016, **Green Tree Electronics Recycling** (GTER) acquired **Trinity Recyclers**. The Laguna Niguel, California electronics recycler services the California counties of Orange, San Diego, Riverside, LA, and San Bernardino. Trinity was founded in 2014. GTER serves Southern California with electronics recycling and refurbished electronics.



## Spotlight On: Non-Hazardous Liquid Waste

*Demand for non-hazardous liquid waste management services is growing, spurred by environmental regulation, landfill diversion, and waste-to-energy initiatives, with waste recovery a driving theme. Scarcity and demand for clean water have perpetuated an increasingly stringent regulatory environment with greater attention on wastewater discharges, positioning the industry for growth.*

This spotlight was designed to serve as an industry primer on the non-hazardous liquid waste market and was compiled through discussions with industry executives and data analysis. We conducted a series of interviews within the corporate community to gauge opinions on the “state of the market” in the United States. Interviews were designed to obtain broad coverage of the liquid waste market and garner opinions from companies involved in wastewater and non-hazardous liquid waste management. Questions encompassed a broad array of topics, ranging from customer trends and preferences, regulation, and competition to technology and beneficial reuse. Such discussions and analysis yielded insight into market trends that are driving industry growth.

### HIGHLIGHTS

- Demand drivers point to continued strength in the broader non-hazardous liquid waste industry:
  - The refinery, chemical, and general manufacturing industries are currently benefiting from strong economic tailwinds and poised for increased demand. Oil production is at an all-time high with spending on refinery construction and maintenance expected to increase, particularly as aging facilities experience increased utilization and capacity. Chemical processing projects are also set to increase demand and spending. Plants will need to comply with government regulations, quality management, and safety and health policies, and all have a regular need for wastewater collection at their sites.
  - Wastewater infrastructure is aging and will require investment in the construction, repair, and maintenance of treatment systems to meet projected demand. Companies that serve the municipal wastewater market are poised to benefit with rehabilitation stimulating demand.
  - Macro drivers of population growth, changing demographics, and rising disposable income will sustain demand in the grease and septic markets.
- A growing regulatory focus on water and waste recovery, both at the state and federal level, with bipartisan support, is expected to spur demand for services.
- Customers are consolidating vendors as purchasing becomes more centralized to the benefit of larger liquid waste service providers. Greater environmental awareness is elevating compliance and safety in purchasing decisions.
- Investment in technology is accelerating as operators diversify into new waste streams and seek to maximize resource recovery.
- The highly fragmented industry is capturing the attention of private equity investment, illustrated by recent financial sponsor platform activity, which is indicative of a favorable near-term outlook and expectations of growth. Private equity will be a driver of consolidation with acquisitive growth central to the investment thesis.
- Consolidation is continuing as participants look to build scale in a fragmented market. Acquisitions will be necessary to drive outsized growth, with strategies focused on expanding into new markets and waste streams to diversify revenues.



## Non-Hazardous Liquid Waste

### Industry

The liquid waste management industry is predominantly local market driven and highly fragmented, serviced by hundreds of operators with varying levels of sophistication. Market participants handle multiple waste streams and engage in various services along the value chain, from collection and hauling to processing, recycling, and disposal. Large players typically control the waste streams through collection and are vertically integrated from waste handling and treatment through disposal.

Liquid waste streams are diverse and derived from many sources including commercial, industrial, and residential generators of waste. In this paper we focused on the following types of wastewater:

- Restaurant and food waste
  - Yellow grease (used cooking oil)
  - Brown grease
  - Septic waste
- Residential waste
  - Septic waste
- Industrial waste
  - Chemical wastewater
  - Solid wastewater
  - Organic wastewater

Virtually all types of residences and businesses produce wastewater in some form. For the purposes of this paper we focused on the following key customer types:

- Municipalities
- Food production and processing
- Restaurants
- Industrial manufacturing
- Residences

We intentionally excluded energy producers from the study. Although entities like power plants have permits to produce large amounts of wastewater, particularly nuclear power plants, they typically recycle their own water in a closed loop that never enters the larger wastewater treatment ecosystem and therefore was considered out of scope.

**Municipalities** operate from a taxable base to clean water and wastewater. Recent statistics identified 14,748 municipal wastewater treatment plants in operation nationwide.<sup>1</sup> Service providers bid for operation and maintenance (O&M) contracts in the wastewater market. More large municipalities are soliciting bids in the form of RFPs (request for proposal) or best value as companies try to promote different ways of handling the wastewater. Additionally, municipalities are increasingly outsourcing steps in the residuals process in a wastewater treatment plant, including O&M contracts for dewatering, centrifuges, belt presses, and compost operations. The municipal market is highly fragmented. Participants are seeing companies like Veolia and Casella Organics when competing for O&M contracts in certain regions of the country.

**Food processing** includes captive waste from industrial food processing plants. Converted waste is land applied for beneficial reuse as fertilizer or is rendered for use in animal feed.

**Restaurants** broadly refers to the waste grease market with restaurants and foodservice establishments as major customers. More than 1 million restaurants are in operation across the United States<sup>2</sup> and produce both yellow grease (used cooking oil) and brown grease (fats, oils, and grease from cooking).

**Industrial** is diverse and includes customers such as petrochemical plants, refineries, and LNG plants, of which a large concentration are located along the Gulf Coast, as well as general manufacturing plants. Hazardous waste companies like Clean Harbors will crossover and participate in the market.



# Spotlight On:

## Non-Hazardous Liquid Waste

### Permitted Facilities

Liquid waste management is regulatory driven with macro trends favoring more stringent oversight as demands on water increase.

The Clean Water Act (CWA) is the federal regulatory framework governing wastewater discharge control and is administered predominantly at the state level. Regulations govern treatment of waste delivered to centralized waste treatment (CWT) facilities. CWTs are permitted wastewater treatment plants that must adhere to CWA effluent guidelines and pretreatment standards and meet the discharge parameters of publicly-owned treatment works (POTWs), or municipal wastewater collection systems.<sup>3</sup> Recent statistics identified 14,748 municipal wastewater treatment plants in operation nationwide.<sup>1</sup>

CWA guidelines classify waste streams in the following categories: metal-bearing waste, oily waste, organic waste, wastewater, or used material received from off-site. Pretreatment involves reducing pollutants and solids prior to discharge to POTWs. Residual solids are further processed for reuse or disposal.<sup>3</sup>

### Permits

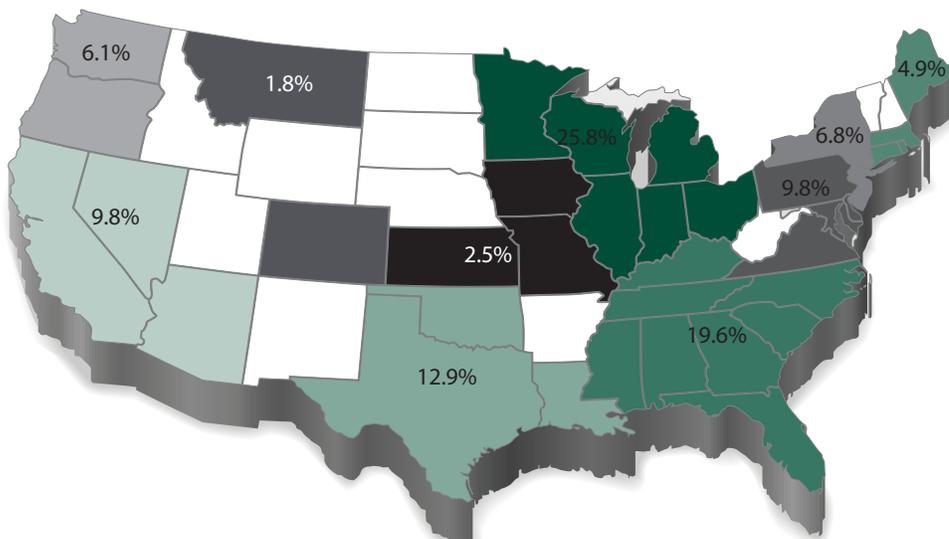
Permits and capital cost were cited as key challenges in greenfield expansion and barriers to entry in certain markets.

“There are certain markets where you are just not going to get a permit. There are other markets where, if you get a permit, it is going to be incredibly stringent. And there are some markets that are very friendly and welcome the wastewater. You really need to pick the right spot for expansion,” said a provider of commercial wastewater treatment services.

“Each of these plants is set up differently, and the waste streams can vary significantly. Municipalities are waking up to the cost of running their own plants and the impact that the users are having on their day-to-day activity, so they are minimizing some of these constituents to keep the plants running at peak efficiency.”

“It is not cheap to set up a commercial wastewater treatment operation. To come in and greenfield a location, you have to be pretty confident you can take business from an incumbent in a given marketplace. As a result, you are more likely to see a facility acquired than a greenfield expansion,” said an industrial services company in our survey.

## Geographic Distribution of Centralized Waste Treatment Facilities



An online search using the EPA's DMR Pollutant Loading Database identified 21 direct discharging centralized waste treatment (CWT) facilities, i.e., facilities which discharge directly to a surface water. Direct discharging facilities are required to get NPDES (National Pollutant Discharge Elimination System) permits and to submit discharge monitoring reports (DMRs) to the EPA. Direct discharging facilities are tracked at the national level. A search of indirect discharging facilities—facilities which discharge to POTWs—identified 102 facilities.<sup>4</sup> An early EPA study of the CWT Industry identified 223 CWT facilities in the United States of which 163 discharge wastewater.<sup>5</sup> The graphic was created using EPA study data to provide a directional indication of CWT locations, although the actual number is likely larger in certain regions.



# Spotlight On:

## Non-Hazardous Liquid Waste

EPA wastewater data and industry perspective suggest up to ~100+ billion gallons of wastewater treated daily in U.S.

Taxonomy		Water Flow (bgal/day)		Description
Non-hazardous Wastewater	Industrial	Chemical	6	<b>Chemical:</b> Water that requires treatment to neutralize foreign chemicals e.g., nitrogen, phosphorus, etc.
		Solid	17	<b>Solid:</b> Water that requires filtration to remove solid particles that have contaminated water
		Organic	3	<b>Organic:</b> Oxygen demanding (biochemical and chemical) pollutants that develop in wastewater that adversely affect discharge location
	Commercial (Restaurants, hotels, commercial kitchens)	Sewer	31	<b>Sewer:</b> Water discharged from commercial or residential source that travels through sewage systems to either private or public wastewater treatment plants
		Septic	2	<b>Septic:</b> Water that is from a commercial or residential source that is stored in a septic tank. Effluent water is slowly discharged into a drain field while sludge is to be manually removed
		Grease	6	<b>Grease (commercial):</b> In commercial settings (e.g., food preparation) grease must be stored in a grease trap and be manually removed once every quarter
	Residential	Sewer	30	
		Septic	9	
	<b>Total</b>		<b>104</b>	

1. Hazardous waste is not in scope.  
Source: EPA DMR Database, Industry interviews. Energy SIC Codes excluded from analysis



## Non-Hazardous Liquid Waste

### Tipping Fees

Industry participants discussed trends in wastewater tipping prices and differences by geography and type of wastewater.

Insiders indicate there has been little to no growth in tipping fees. “It is all about efficiency,” said Brandon Velek, President of Intergulf Corporation. “We have not seen the per gallon rate increase like it should in the Houston market where there is heavy competition and a struggling oil and gas industry.”

“Pricing varies by geography,” commented Andy McNeill, chief executive officer at Denali Water Solutions. “These facilities are landfill-esque. The closer the treatment facility is to a generator, the higher the tipping fee because the transportation costs will be lower.”

“Tipping does vary by location, and the municipalities drive it a lot. Some municipalities charge a fixed annual fee, others charge by truck size or the actual gallon,” offered J.J. Smith, chief executive officer at Valley Proteins. “Our cost of getting rid of the waste is going up, but it is going up more because we have to haul more waste away, more so than the cost per gallon is increasing.”

Insiders expect tipping fees and processing fees for grease and food waste to decline over time as additional capacity comes into the market. “It really comes down to who controls the waste stream,” commented John O’Connell, chief executive officer at Wind River Environmental. “In the Northeast, there seems to be a lot of activity surrounding responding to the mandates for food waste processing. That is creating some additional capacity in the market that ultimately can only do one thing which is to reduce tipping fees.”

### Capacity

Executives addressed current constraints around wastewater disposal capacity in the marketplace.

Capacity constraints vary by geography, not by type of wastewater, insiders said. Industry participants are seeing more municipalities sensitive to volume. “In the past, it was a simple process to get our limits increased if our wastewater volume had increased. It hasn’t been as easy. In many cases, if we want to get our capacity increased, our limits from the POTW get lowered,” said a regional provider of commercial wastewater treatment services.

“It is driven by changes in permit discharge requirements. Whether you discharge into another plant or into a watershed, those all have limits. In certain places, those limits can be tighter because you might be attached to an endangered watershed,” added McNeill.

“Municipalities are more knowledgeable about monitoring generators and more vigilant to do so,” said a regional liquid waste company.

*“Municipalities are more knowledgeable about monitoring generators and more vigilant to do so.”*

*—Regional Liquid Waste Company*



## Non-Hazardous Liquid Waste

### Regulatory

Participants do not anticipate broad scale changes in regulations that will affect the industry dramatically in the near-term. Any changes are expected to be incremental favoring a tightening of standards in the future. “Scarcity and clean water are prevalent themes,” said Andy McNeill at Denali Water Solutions. “We are not going to see any loosening of rules to deliver clean water.”

“It is a very local question about which region or even which state is going to enforce its environmental regulations. You have a federal government now that sends mixed messages. They’re trying to modify some environmental regulations but heavily enforcing others,” commented Bill Fahey, a senior vice president at Veolia North America. “It is going to matter where the states regulate hard. I would argue that it will be the blue states that will try to enforce regulations with greater tenacity than they would have a year ago.”

Wastewater discharge requirements are becoming more stringent, illustrated by an increasing focus to limit constituents to protect water sources. “Each municipality is different depending on the treatment capabilities they have. We have been seeing push back from local POTWs to lower limits because of issues that they are facing in generating clean water,” said a national provider of container cleaning and commercial wastewater treatment services. “Effluent limits that had been consistent for many years are now being lowered to meet new, more stringent standards.” Insiders say the trend is particularly apparent in areas where clean water may be scarce.

“The EPA is making it more and more difficult. They want to regulate the least number of point sources possible, so it is very difficult to get a private wastewater treatment system approved for direct discharge to a water body if you have a municipal sewer option,” commented J.J. Smith at Valley Proteins. “The EPA is going to push toward going through a municipal sewer. They don’t want more discharge points to regulate than necessary. That is certainly a focus.”

Insiders point to challenges posed by variability in state oversight when managing different waste streams. “The industry would be well served by greater enforcement of existing regulations than has been the case,” observed John O’Connell at Wind River Environmental. “In Massachusetts, for example, there are detailed septic system inspection requirements mandated under Title 5. In other states, there are no regulations. Many states have grease pumping frequency requirements, but in many instances, they are not strictly enforced.”

### Developments

There is growing attention on nutrient levels in wastewater discharges, with increasing levels of phosphorus and nitrogen being discharged into sensitive areas. “It is those constituents on a parts per million or milliliters per liter

basis that are measured inside water. You are going to continue to see a tightening of those limits over a period of time,” said McNeill. “This is especially true of those watersheds that have issues around the country, like the Chesapeake Bay where excess nutrients are impacting water quality.”

The EPA is currently evaluating production water in oil and gas drilling which could have a significant impact on treated wastewater volumes at CWTs. An EPA study is being conducted to examine various operating and financial characteristics of CWTs that accept oil and gas extraction wastewater. Treatment technologies and environmental impacts of discharges are also under assessment.<sup>3</sup> “If oil field production waters are treated as an EPA regulated waste as opposed to an exempt waste, there will be a significant change in volumes for CWTs,” commented Brandon Velek at Intergulf Corporation. “The EPA has been looking at this issue for several years now. It could be a potential growth area for facilities that are located close to oil drilling activities.”

*“Scarcity and clean water are prevalent themes. We are not going to see any loosening of rules to deliver clean water.”*

*—Andy McNeill  
Denali Water Solutions*



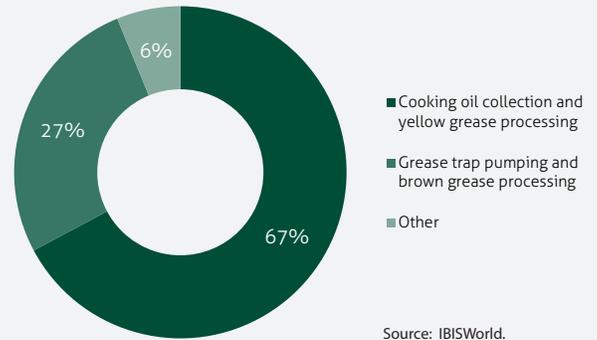
### GREASE

Waste grease is an estimated \$4.0 billion market serviced by more than 500 operators. Waste streams consist of yellow grease (used cooking oil (UCO)) and brown grease collected from commercial and industrial cooking operations and foodservice establishments. Spent UCO is typically disposed of in barrels that are picked up by service providers and then processed. Brown grease is often washed down the drain and collects in grease traps. Services consist of grease trap pumping, cleaning, and maintenance; processing; and disposal. The industry has seen steady growth, with compound annual growth in revenues of .7 percent between 2012 and 2017 and is forecasted to grow 2.7 percent annually through 2022.<sup>6</sup>

Local markets are serviced by dozens of small operators but will typically have two or three dominant players that have the collection network and are vertically integrated through treatment and disposal. Grease trap service providers are often handling other types of sundry wastewaters that are typically easy to handle with septic waste. Examples of national and regional providers include Liquid Environmental Solutions (LES), Restaurant Technologies, Wind River Environmental, Southwaste Services, and Mahoney Environmental. Rendering companies such as DAR Pro Solutions, part of Darling Ingredients (NYSE: DAR); Valley Proteins; and Baker Commodities also participate in the market, collecting byproducts (i.e., used cooking oil) that can be recycled into feedstock for use in the production of biofuels or animal feed ingredients. These companies also provide grease trap services as a way to deepen relationships with their customers.

The market has seen M&A activity accelerate with a number of large assets trade in recent months, including Wind River Environmental (Gryphon Investors) in 2017. Liquid Environmental Services has been particularly active and consolidating the industry, completing three acquisitions during the last 18 months.

### Grease Market Segmentation



Waste grease processing involves extracting and recycling fats, oils, and grease (FOG) from wastewater for beneficial reuse. Yellow grease is recycled for use as feedstock in the production of alternative fuels and feed additives. Brown grease is used as a feedstock in anaerobic digestion and alternative fuels. The Food Safety Modernization Act now prohibits restaurant trap grease from being processed and used in animal feed.

Strict state and local regulations mandate regular cleaning and maintenance of grease traps to prevent FOGs from entering municipal sewer systems, which can lead to blockages resulting in sanitary sewer overflows (SSOs). Nationwide, approximately 35 percent of the blockages resulting in SSOs are attributed to brown and yellow grease.<sup>6</sup>

Frequency of grease trap maintenance and pumping is typically mandated by state or local governmental agencies every 60 or 90 days for larger, in-ground grease interceptors and monthly for point-of-use traps. Many municipalities impose fines for noncompliance. Over the next five years, stricter financial penalties will be compulsory for businesses that do not properly dispose of FOGs.<sup>6</sup> The industry is shifting toward full evacuation of grease trap contents which has increased cost to service providers. Trucks are required to haul away more waste which reduces capacity to service additional stops.



## Non-Hazardous Liquid Waste

### SEPTIC

Septic waste\* is an estimated \$1.3 billion market and highly fragmented.<sup>7</sup> Markets are localized and serviced by multiple small operators. Septic systems—also called onsite wastewater systems, decentralized wastewater treatment systems, and private sewage systems—process residential and commercial sewage. According to the EPA, more than 60 million Americans (more than one in five households) rely on onsite systems for wastewater treatment. Septic or decentralized systems account for approximately one-third of new development.<sup>8</sup> The National Association of Home Builders estimates that about 16 percent of new single-family homes constructed in 2015 contained a septic system.<sup>9</sup>

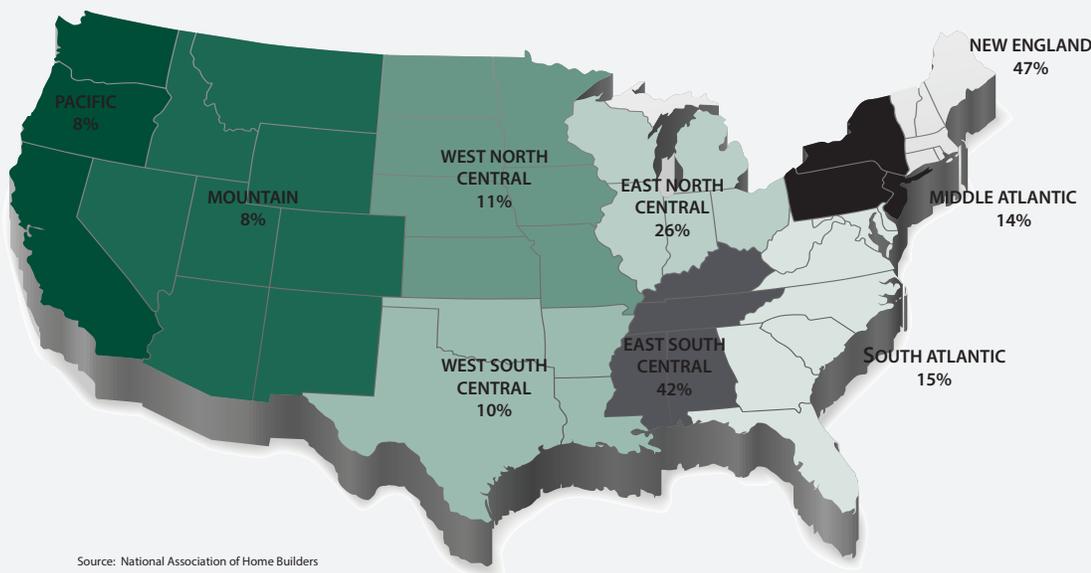
Septic tank cleaning services include pumping, inspection, and maintenance. Pumping is typically performed every three to five years, with older systems requiring more frequent maintenance and inspection. Providers of septic tank services will also typically offer additional services such as drain cleaning and pipelining.<sup>7</sup>

Distribution of septic systems varies by region and state. Concentration of residential septic systems is the highest in the New England states, with an estimated 55 percent of all homes in Vermont and about 50 percent in New Hampshire and Maine served by individual systems. This contrasts with California at only 10 percent.<sup>7,8</sup>

More than one-third of homes in the Southeastern U.S. are on septic systems, with high concentrations in North Carolina (about 48 percent) and Kentucky and South Carolina, both at around 40 percent.<sup>7,8</sup>

\*Revenue for Septic Tank Cleaning and Maintenance in 2017, a segment of Portable Toilet Rental & Septic Tank Cleaning, valued at \$5.3 billion. Additional segments include Drain and Sewer, with an estimated revenue of approximately \$1.2 billion and Other (includes removal of wastewater), valued at \$1.4 billion.<sup>7</sup>

### Regional Distribution of New Homes Built with Septic Systems, 2015



Source: National Association of Home Builders



## Non-Hazardous Liquid Waste

### Customers

#### Vendor Selection

Customer behavior is evolving as greater environmental awareness elevates compliance and safety in purchasing decisions. We polled market participants to gauge the importance of key measures in vendor selection. Competitive dynamics continue to pressure pricing, which was consistently cited as the most important criterion in the selection of a service provider. Professionalism, safety, compliance, and breadth of services were identified among other critical benchmarks.

“We have seen price erosion from a competitive standpoint, but our customers, major corporations, have been more focused on compliance and this is where we shine,” offered Brandon Velek at Intergulf Corporation. “The regulations, especially air regulations, that water treatment plants are required to comply with have become more and more stringent. With environmental and safety compliance becoming more of a customer focus for vendor selection, many of our larger customers have contracted with third party auditing entities to review records and audit the facilities. These auditing entities share compliance records, for a fee, with other corporations interested in doing business with us. Hopefully, compliant facilities will be able to fetch better gate rates as compared to facilities that are not as focused on safety and environmental compliance.”

Surveyed companies identified automated vendor compliance management as a growing trend in the industrial market, citing increasing use of web-based tools like ISNetworld to help manage vendor relationships. Customers utilize scoring mechanisms to rate vendors against their safety and compliance standards. “Nobody had that five years ago. It makes it harder for the smaller operators to meet these minimum bars,” said Andy McNeill at Denali Water Solutions. “Safety has always been important,

but the compliance aspects become more highlighted in that environment. Having a safety track record is a minimum standard now. You just can’t hide from it.”

“We have heavy competition, so wastewater disposal fees are cheap in the Houston market. The only way you can be successful at it is by being efficient and auditable, both from a regulatory and customer perspective,” Velek said. “Our customers are very concerned about their liability, so we focus on having a facility that has an outstanding safety and regulatory record and audits well from the customer’s standpoint.”

There are still a fair number of customers that are dealing with local “mom and pop” operators with less than robust environmental safety practices, insiders said, making it challenging to differentiate on these services. “I wish customers were more engaged in environmental and safety compliance and would look at those criteria, but their key determinant in most cases is price,” said a national provider of industrial cleaning and commercial wastewater treatment services. “In time, people will do a better job of selling those differentiating factors and getting paid for them. That is our hope. In order to do so, you need to bring some value to the customer.”

“Across the board, if people were ranking their priorities in order of importance, service levels and quality of service would generally be high on the list, but then when you look at their decision making, it actually always revolves around cost,” commented John O’Connell at Wind River Environmental. “So the challenge is being able to provide the highest service level possible and meet the challenges the marketplace is requiring from a cost standpoint.”

There has been a clear trend toward the importance of safety, particularly for the larger, more sophisticated customers, O’Connell indicated. “If you map out the level of sophistication of buyers of our services on a continuum, you have the small, local

*“Our customers are very concerned about their liability, so we focus on having a facility that has an outstanding safety and regulatory record and audits well from the customer’s standpoint.”*

*—Brandon Velek  
Intergulf  
Corporation*



## Non-Hazardous Liquid Waste

companies that aren't that concerned with safety. Then you have the industrial customers or municipalities on the far end of the spectrum that are very concerned," stated John O'Connell at Wind River Environmental. "What that essentially means is the larger industrial companies are going to be less likely to use the small, local companies than companies that have the means to ensure that they have the proper training and investment in safety and equipment."

The presence of and growth in third party service aggregators was identified as a significant development in the industry. "Their presence has forced companies that provide direct service to make a decision whether to provide the services to these aggregators," offered O'Connell. Aggregators operate with strict requirements on service execution, particularly for administrative issues, sometimes presenting challenges for operators to collect services. "We have seen a shift towards these aggregators. The upside for the end user has been a short-term reduction in expenses. However, the longer-term implications may be a reduction in service levels and their systems could be negatively impacted as a result."

### Vendor Consolidation

Large customers are becoming more centralized in their decision process, insiders said. National chains are aggregating their purchasing decisions and looking for service providers that can cover a broad geographic area. Their success is often dependent on the level of fragmentation in a given market. Procurement groups in larger companies have taken on a greater share of the decision making.

"The industries that are under more stress tend to fight that stress with more aggressive procurement approaches, so pushing for more competition, questioning more pricing, and seeking more cost justification of value. Every sector is very different in that sense," commented Bill Fahey at Veolia North America.

"There certainly is much more of a push towards national and centralized accounts," said J.J. Smith at Valley Proteins. "Large chains like Walmart are moving toward hiring consultants like Quest to manage all of their waste streams, and that has certainly advantaged the larger providers at the expense of the smaller providers. It has been frustrating for us because we prefer to have the relationship directly with Walmart rather than with Quest. It has kind of been the way of the world over the last few years."

"You might see that in waste grease where a large restaurant chain uses a procurement company such as Rubicon or Oakley to manage its vendors. The trend is less prevalent in industrial cleaning or in biosolids," offered Andy McNeill at Denali Water Solutions.

"There has definitely been a trend towards centralized buying decisions on the part of chains with the objective of reducing the number of service providers, because every incremental service provider that they need to have to fill in their geography is additional administrative overhead and cost in it," stated O'Connell. "Being able to centralize their purchases and consolidate the service execution within fewer vendors is in their interest. That being said, it doesn't change the competition on the local front. That's a local market-by-market challenge."

*"There has definitely been a trend towards centralized buying decisions on the part of chains with the objective of reducing the number of service providers, because every incremental service provider that they need to have to fill in their geography is additional administrative overhead and cost in it."*

*—John O'Connell  
Wind River  
Environmental*



### WASTEWATER INFRASTRUCTURE

Today, over 76 percent of the U.S. population (240 million Americans) is served by centralized wastewater collection and treatment systems. The remaining population uses septic or other onsite systems. Recent statistics identified 14,748 municipal wastewater treatment plants in operation nationwide.<sup>1</sup>

The American Society of Civil Engineers (ASCE) released the Infrastructure Report Card this January, assigning a grade of D+ to the nation's wastewater systems.<sup>1</sup> The study is performed every four years and evaluates the condition of national infrastructure categories to assess needs and investment. Age and deteriorating condition, population growth, and growing quantity and complexity of contaminants are straining current systems creating a need for new facilities.

"It is an industry that is severely underinvested. Most municipalities haven't made the necessary investment in automation and visibility into operations and have become very inefficient," commented Bill Fahey at Veolia North America. "Municipalities have been reluctant to raise rates and really charge the true cost of water. Because of that, there is a lack of money available for them to invest."

According to EPA estimates, \$271 billion will be required to fund wastewater infrastructure improvements over the next 25 years, with treatment plant improvements, new conveyance systems and system repairs, and recycled water distribution accounting for the majority (75 percent) of spend.<sup>1,10</sup> A major driver will be projected demand on wastewater systems. Centralized treatment systems are expected to add more than 56 million new users by 2032 representing a 23 percent increase in demand. These are users moving from private septic systems to centralized treatment plants, which is estimated will require the construction of 532 new systems to meet forecasted treatment needs.<sup>1</sup>

While federal funding for wastewater infrastructure is made available through the Clean Water State Revolving Fund, the majority occurs at the local level. According to the ASCE Report Card, an estimated 95 percent of water infrastructure funding is made locally. The Water Infrastructure Finance and Innovation Act was later introduced with the goal to fund large water infrastructure projects.<sup>1</sup>

Private equity is expected to play a significant role in project funding in the coming years with capital raised targeting infrastructure and wastewater. Private investment the form of public-private partnerships holds promise, although market participants indicate wastewater infrastructure is in the early stages of development. Insiders see significant upside for companies that serve the municipal wastewater market due to the lack of infrastructure spending.

"There is a lot of money that has to be spent in this sector. What is going to drive investment? Obviously, public health is a driver. There have been some major catastrophic failures of water and wastewater systems that have caused investment," said Fahey.

"Your link to investment in water and wastewater is really regulation and enforcement," he continued. "If you look at all the major spends in the municipal sector, all have been very much regulatory driven. As you see more enforcement, it will give municipalities the political cover to spend the money and raise rates. Hopefully, economic growth will contribute to it as industries need water too."

"There is probably an argument that there is a good play for private equity if the pricing is right. If the public-private partnership model were to be embraced by local politicians and water authorities, I think there is a real opportunity for private investment."

"Most of the major investment in water and wastewater has been the result of either regulation or major issues with the systems."

- Bill Fahey, Veolia North America



## Non-Hazardous Liquid Waste

### Beneficial Reuse

Broader themes of diversion and waste-to-energy are encouraging beneficial reuse. Liquid waste companies are exploring ways to utilize material streams and convert them into valuable resources. There is greater demand for and capital being deployed into conversion and processing technologies, which is expected to become more meaningful to waste recovery in the coming years.

Processing of liquid waste streams and residual solids from wastewater takes on different forms in waste recovery:

- Recycled yellow grease (used cooking oil): feedstock in the production of alternative fuels and additives
- Organic residuals, including biosolids (sewage sludge) from wastewater treatment and commercial, industrial, and residential food waste: treated for use in fertilizer, compost, alternative fuels and power (electricity/heat). More than half of recovered biosolids are land applied as fertilizer or soil amendments, according to the EPA.
- Recoverable oil products from wastewater: feedstock in recycled fuel oil and fuel additives

The commodity markets impact the value of waste byproducts subjecting operators to market exposure. In high commodity price environments, renewable alternatives are more attractive. “If we continue to subsidize renewables, then you will more likely see reuse,” said J.J. Smith at Valley Proteins. “If countries are less aggressive with mandates and eliminate subsidies, then it is going to be harder and harder to recover enough value to justify the processing.”

Regulation is a driver that is advancing waste recovery. Legislative mandates and subsidies have served to advance the production of alternative fuels in the United States and abroad. Federal legislation was enacted through the passage of the Renewable Fuel Standard and Energy Independence and Security Act to promote biofuel development in the United States. Legislation mandating diversion and food waste bans is advancing organics management, with California and several Northeast states among the first movers to tackle the nation's

food waste challenge. Vermont, Connecticut, Massachusetts, and Rhode Island are among the states with state-level waste bans, and California has mandated a statewide organics recycling law.<sup>11</sup>

“Today, Solid Separated Organics (SSO) is an emerging waste stream in the municipal market,” commented Andy McNeill at Denali Water Solutions. “You are going to see SSO waste moving from the trash stream through regulation.”

“It is a very big market potentially, but it is heavily dependent on enforcement of regulations and government incentives,” commented Bill Fahey at Veolia North America. “Regulations often only apply if you are a large producer of organic waste. The issues are siting the facilities, how much solids they have, and if there is a business case. Usually, what you often find is without incentives, it is very hard to justify capex.”

*“Digesters are being added to municipal systems, but only benefit the municipality if they know how to use them to their full potential or full capacity. Private systems are built with that in mind.”*

*—Regional Liquid Waste Company*

Anaerobic digestion (AD) as a solution in beneficial reuse is a positive trend in the industry and its application in organics management will steadily increase due to regulatory mandates. The digester count has increased significantly over the last five years supported by growth in merchant digestion facilities. Data from the American Biogas Council (ABC) identifies 1,269 water resource recovery facilities using digesters, of which approximately 860 supply energy from biogas. More than 2,440 plants are considered viable for future biogas development.<sup>1</sup> Merchant facilities accept various organic waste streams as feedstock, including food waste, food industry processing residuals, brown grease, and wastewater treatment residuals. Private capital is entering the market to finance AD projects which has contributed to expansion.

“Siting is very important. Typically, discharge coming out of those plants is really high in biochemical oxygen demand (BOD). Most of the loads are so high, it would cripple even a mid-sized wastewater plant. For those facilities to be successful financially, I would argue they have to be tied into a large sewer system,” Fahey offered. “You also want to be close to the waste. In urban areas, it is easier because the waste is going to be where there are a lot of people.”



## Non-Hazardous Liquid Waste

City and county odor ordinances have been a hurdle in the organics movement, in addition to opposition from not-in-my-backyard (NIMBY) initiatives. In addition, waste companies are required to navigate a myriad of regulatory issues in every state. “The actual process to land apply, compost, or digest are similar across states; however, the permitting process can be radically different,” said Andy McNeill at Denali Water Solutions.

Insiders point to significant regional pricing variances which impacts demand. “In regions like the Northeast where landfill pricing is high, you can afford to do creative things with waste streams,” said McNeill. The organics movement is going to require a shift in infrastructure to handle the waste, so it won’t happen overnight, indicated McNeill. Highly populated areas with low landfill capacity will go first. Companies like Denali Water Solutions are among a growing number beginning to offer specialty services to meet anticipated demand—drying, anaerobic digestion, composting. “You will see the market shift depending on the breadth of services provided,” McNeill commented.

“In California today, if you are a commercial producer of a high quantity of organics, you now have to separate it. By 2022, your average homeowner is going to have to separate organics as well. Landfill scarcity and like-minded communities are driving recycling,” McNeill added. “New York is running a volunteer program that they will eventually make mandatory on that fourth stream of trash. You are going to see the emergence of those sorts of waste, and companies with composting or anaerobic digestion capabilities will be well positioned.”

“Waste recovery is going to become really big. There is a real opportunity not only in the municipal market but also in the industrial market on treating these wastes and converting them into useful products. Take phosphorus removal in a wastewater plant. There is only a finite amount of phosphorus in the world, and phosphorus is a valuable commodity. There are technologies that are pulling phosphorus out of waste streams and converting it into a marketable product,” said Bill Fahey at Veolia North America.

“I believe that beneficial reuse will continue to be a disposal option,” commented McNeill. “The term beneficial reuse can mean many things—land application, composting, digestion, waste-to-energy—and each has different cost points. Sometimes pricing and quantity dictate the lower cost solutions.” He continued, “As a society, we would rather beneficially reuse our waste than landfill it. But as we make that shift, there needs to be recognition that it will take time to build the facilities to handle the waste streams.”

### Technology

Technology investment is accelerating as operators diversify into new waste streams. “It all depends on the waste stream that you have and the type of water you are trying to clean,” said a provider of container cleaning and wastewater treatment services. “You see people zeroing in on different streams of wastewater and perfecting the way that they treat that wastewater, for example, oily water and the extraction of reusable fuel or refined fuel.”

“The really interesting driver in this market is going to be technology,” Fahey added. “There is investment coming. You are seeing better methods for drying solids that are more cost-effective. Some people are looking at gasifying the solids. If a strong technological player comes in and finds a way to do things cheaper, they are going to do really well in this market.”

“We are seeing more investment in technology, and it comes in many forms—everything from digesters and composters to separating the oils and selling into the fuel market. Depending on where you are in the country, there is different penetration of each of those. That has been a positive trend,” said John O’Connell at Wind River Environmental. “I think it is an opportunity for margin enhancement on the part of companies that are of the size that can support it.” He added, “If you are going to make an investment in any kind of technology, whether it is dewatering or any of the beneficial reuse

*“I believe that beneficial reuse will continue to be a disposal option.”*

*—Andy McNeill  
Denali Water Solutions*



## Non-Hazardous Liquid Waste

streams like digesters or composting, you want to make sure that you have sufficient flow to justify the investment. You tend to see mid-size to larger companies making those investments.”

Wind River Environmental has expanded into green waste streams through acquisition with the purchase of Kline’s Services and Earth Farms Organics, adding anaerobic digestion and composting capabilities to offer sustainable waste diversion solutions.

Denali Water Solutions recently merged with WeCare Organics. The combination joins WeCare’s strong footprint in the Northeast with Denali’s west coast and southern United States presence creating a national platform with expertise in composting, biosolids, and green waste. Commenting on the merger, Denali CEO Andy McNeill said: “The combined team puts us in the pole position to provide innovative solutions around sustainable waste practices and waste conversion. The future is bright.” Jeff LeBlanc, the former CEO of WeCare and now the President of Denali North America commented that “the focus and structure of the combined entity will allow us the opportunity to strategically align with industry technology providers and play a pivotal role enacting change within the industry.”

The company also formed a new division called Denali Technologies to advance technology development across its platform. Strategic partnerships with industry players including technology and equipment providers, engineers, regulators, and infrastructure investors will further innovation in waste recovery.

### Outlook

#### Demand

Demand drivers continue to support a favorable industry outlook:

- A growing regulatory focus on water and waste recovery, both at the state and federal level, with bipartisan support, is expected to spur demand for services.
- Population growth will drive increased consumption and demand for clean water.

- Rising disposable income will positively influence consumer spending, a driver of restaurant growth. Restaurant industry sales are projected to grow 4.3 percent (1.7 percent adjusted for inflation) in 2017, according to the National Restaurant Association, with steady growth anticipated over the next several years driven by favorable economic fundamentals and pent-up consumer demand for restaurant services.<sup>2</sup>
- Industrial consumption will grow in line with the economy. The Congressional Budget Office is projecting real GDP growth of 2.2 percent in 4Q 17 and 2.0 percent in 2018.<sup>12</sup> While uncertainty surrounds timing and implementation, Republican policy changes addressing tax reform, infrastructure spending, and regulatory easing offer the potential to stimulate economic growth.

“If the economy grows, there will be more demand for water and waste. If the economy contracts, the water and wastewater infrastructure still has to be maintained. There is a lot of money that has to be spent in this sector,” offered Bill Fahey at Veolia North America.

“Market forces will continue to be strong. You are going to continue to see a tightening of discharge parameters over a period of time. This is especially true of those watersheds that have issues around the country. There will continue to be more people, so there will be greater demands on water and treatment of wastewater. Those really are not forces that are influenced by commodity markets,” offered McNeill.

“The industry is in great shape and should continue to be. Whether it is the introduction of additional regulations, the enforcement of existing regulations, or the move towards beneficial reuse to a greater extent, all that bodes well for the industry,” offered John O’Connell at Wind River Environmental. “Even during the recession in 2008 and 2009, while the world seemed to be crumbling around, it seemed like demand for our services was constant throughout that period. The industry might not be recession proof, but I think it is largely recession resistant.”

*“Whether it is the introduction of additional regulations, the enforcement of existing regulations, or the move towards beneficial reuse to a greater extent, all that bodes well for the industry.”*

*—John O’Connell  
Wind River  
Environmental*



## Non-Hazardous Liquid Waste

“Anywhere there is regulation, there will be more growth in this business,” commented Bill Fahey at Veolia North America. “Where the market is going to be in five or ten years is also a function of what waste is going to be produced. Technology is going to play a major role. Significant capital is being invested into research in these areas. Whoever figures out how to treat the waste cost-effectively will win.”

### Industry Growth

Executives are forecasting modest organic growth of 1 to 5 percent (citing 1-2 percent price and volume growth). Focus will be on efficiency, cost containment, and innovation. The residential segment is expected to remain flat, with no material net increase in the number of homes on offsite wastewater treatment systems. The commercial and industrial segments will offer more significant opportunities for growth.

Acquisitions will be necessary to drive outsized growth. Industry participants will be looking to expand into other services to diversify revenue streams.

“It is difficult to get substantial organic growth unless you are moving out of your own market, geographically or into another waste stream, because somebody is handling all of it right now. It is not emerging waste, other than maybe the organics coming out of landfills, but that is going to come slowly,” said Andy McNeill at Denali Water Solutions. “The bigger growth continues to be through acquisitions. There will be companies that can consolidate parts of the market successfully.”

“Anybody in this business who is successful has been acquisitive,” added J.J. Smith at Valley Proteins.

### Consolidation

The non-hazardous liquid waste management industry is primed for continued consolidation, with new capital coming into the market to fund acquisition growth platforms. Industry consolidators are actively evaluating acquisitions as a means to accelerate growth and gain economies of scale. Private equity sponsors are drawn to the sector’s recession resilience given the essential nature of services provided, while the high level of fragmentation presents significant opportunity to build platforms for consolidation. Similar to the solid waste business model, liquid waste shares the attraction of recurring revenue,

customer diversification, and permitted waste treatment facilities. Recent private equity investment has involved a number of large assets, indicative of a favorable near-term outlook and expectations of growth. Valuation multiples are rising, a dynamic which participants attribute to private equity’s growing participation in the sector and capital available for deals.

“The industry is ripe for some roll-ups. The main driver is consolidating a highly fragmented industry,” said Brandon Velek at Intergulf Corporation. “Consolidating this highly fragmented industry could produce significant economies of scale resulting in a competitive advantage. And I think you can acquire some of these small operators at fairly reasonable multiples.”

“Whether it is private equity or corporate acquirers, buyers are looking for the growth model of expanding organically and through acquisition and greenfield development,” said an operator involved in industrial cleaning and commercial wastewater treatment services. “The capital and infrastructure that some of these private equity firms bring enables them to have a platform to go out and do just that.”

*“Anybody in this business who is successful has been acquisitive.”*

*—J.J. Smith  
Valley Proteins*



## Non-Hazardous Liquid Waste

Private equity will be a driver of consolidation. Large liquid waste and industrial services platforms that have traded in the last 12 months have sold to private equity funds, including Valicor (Wind Point Partners) and Wind River Environmental (Gryphon Investors) in 2017 in 2016.<sup>13</sup>

- Wind Point Partners acquired Valicor in June 2017, stating the growth strategy of “launching new locations and executing add-on acquisitions in a highly fragmented market”. Valicor acquired Ultra Environmental Services in July 2017, an operator of a centralized wastewater pretreatment facility in Kentucky.
- Wind River Environmental (WRE), acquired by Gryphon Investors in April 2017, has a history of private equity backing and a track record of acquisitive growth having completed more than 60 acquisitions to become a regional player in diverse waste materials, from septic and grease to green streams. WRE acquired Soucy’s Septic Service and Plumb Crazy in July 2017.

Market participants shared their observations on private equity’s growing participation in the industry:

“Private equity groups see the value and synergies created through consolidation in this industry,” observed Andy McNeill at Denali Water Solutions. “The recent platforms that have been acquired—Valicor, Wind River Environmental, Quala—in order for them to create value, a likely strategy will be to expand their markets to create scale.”

“Valicor has done well building CWTs in strategic areas, and now they have capital behind them to find single-facility CWTs in strategic areas and buy them, roll them into their operations and marketing programs, and make them more profitable through efficiencies,” offered Brandon Velek at Intergulf Corporation.

“To pursue the roll-up strategy, you want to take capacity out of the market rather than add to it, so the dynamic of where you locate your wastewater plant is important. There can be two locations in a city that are a mile apart, but they might have different local POTWs. One might be very friendly from a discharge perspective, and the other might be very difficult. It is essential to look at the competition, the current

infrastructure, and discharge landscape to determine where is the right market,” said a national operator of container cleaning and commercial wastewater treatment services.

Liquid waste is a route-based business with similarities in the services, equipment, and permitting, insiders said, with complementary acquisitions offering the potential for operating synergies and margin enhancement. Insiders argue that there are few “pure play” commercial wastewater opportunities which can make the search for acquisitions challenging.

“It is a fragmented industry with over 100 permitted commercial wastewater facilities. The ones that we’ve seen vary greatly from one to the next,” said a provider of commercial wastewater treatment services. “What has made us hesitant about moving forward on a number of deals is getting too far outside of our core. We are looking at whether our scope is too narrow, and asking, do we need to be more open to looking at other niches that include exposure to grease or oil or other constituents.”

Acquisition strategies will focus on expanding into new markets and waste streams. “You are going to see the larger companies entering into various spaces. That will be a theme in this business,” commented Andy McNeill at Denali Water Solutions. Participants identified Clean Harbors and Veolia among the participants that crossover into areas of the non-hazardous liquid waste market.

“Clean Harbors is a large player in hazardous waste, an area where there is not tremendous growth. They have a choice—acquire other companies that are handling hazardous waste material or move into adjacent spaces,” McNeill added. “From time to time, we compete against companies like Clean Harbors or Veolia. I think you will see them move into other markets, and there will be logical reasons to do so besides just buying growth because there will be overlaps in service lines.” “Clean Harbors and Veolia would alter the landscape significantly if they decided to get into the game. They are all involved in commercial wastewater in varying degrees, but nothing of scale,” said a regional player in the commercial wastewater market.

*“The industry is ripe for some roll-ups. Consolidating this highly fragmented industry could produce significant economies of scale resulting in a competitive advantage.”*

*—Brandon Velek  
Intergulf Corporation*



## Non-Hazardous Liquid Waste

Despite an increasing level of mergers and acquisitions activity, consolidation is not expected to alter the landscape dramatically, executives said. The localized market and low barriers to entry will continue to encourage fragmentation.

“There are so many small operators, and the barriers to entry are so low. I think you’ll continue to see the industry consolidate, but I don’t see any forces in the market that are driving it to happen fast,” said J.J. Smith at Valley Proteins. “For many years, there has been a trend towards consolidation, and it still continues to be a highly fragmented market,” observed John O’Connell at Wind River Environmental. “Even if you look at the consolidation that has occurred in the solid waste business, every community still has local trash providers that coexist alongside the major players, and that will continue to be the case in liquid waste as well. There will clearly be consolidation of small, 1 to 3 truck operators. However, 10 years from now, there will still likely be a largely fragmented market, and part of the reason is that it is a very difficult and challenging business to run at scale.”

*“It is essential to look at the competition, the current infrastructure, and discharge landscape to determine where is the right market.”*

*—National Operator  
Container Cleaning and  
Commercial Wastewater  
Treatment Services*

### Resources

<sup>1</sup> 2017 Infrastructure Report Card on Infrastructure, American Society of Civil Engineers, March 2017

<sup>2</sup> 2017 State of the Industry, National Restaurant Association

<sup>3</sup> Centralized Waste Treatment Guidelines, U.S. Environmental Protection Agency

<sup>4</sup> Discharge Monitoring Report Pollutant Loading Tool and Jesse W. Pritts, P.E., U.S. Environmental Protection Agency, July 2017

<sup>5</sup> “Document for Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry – Final,” Environmental Protection Agency, August 2000

<sup>6</sup> Chrystalleni Stivaros, “Cooking Oil Recycling in the US,” IBISWorld, March 2017

<sup>7</sup> Meghan Guattery, “Portable Toilet Rental & Septic Tank Cleaning in the US,” IBISWorld, July 2017

<sup>8</sup> Septic Systems Overview, U.S. Environmental Protection Agency

<sup>9</sup> “The Geography of Homes Built on Private Wells and with Individual Septic Systems,” National Association of Home Builders, September 6, 2016

<sup>10</sup> “EPA Survey Shows \$271 Billion Needed for Nation’s Wastewater Infrastructure,” U.S. Environmental Protection Agency, January 2016

<sup>11</sup> Emily Broad Leib, Christina Rice, and Jill Mahoney, “Fresh Look At Organics Bans And Waste Recycling Laws,” BioCycle, November 2016

<sup>12</sup> “An Update to the Budget and Economic Outlook: 2017 to 2027,” Congressional Budget Office, June 2017

<sup>13</sup> PitchBook and Company Websites



# Spotlight On:

## Non-Hazardous Liquid Waste

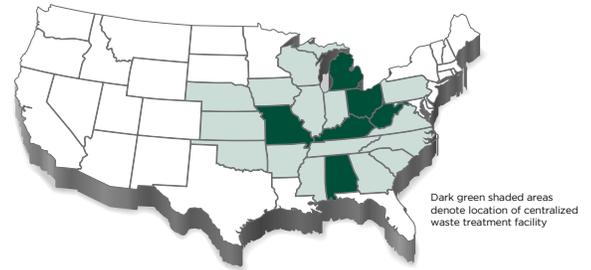
### SELECTED RECENT INVESTMENT ACTIVITY IN LIQUID WASTE



In June 2017, Wind Point Partners (WPP) acquired Valicor Environmental Services from Valicor Inc. WPP acquired all of Valicor's wastewater and oil processing assets as well as ownership of the Valicor brand. WPP partnered with industry veteran James Devlin, former CEO of ReCommunity and Thermo-Fluids, in the transaction.

- Valicor's facility-based network includes 8 centralized waste treatment facilities in the Midwest.
- Waste streams serviced include industrial, leachate, recoverable petroleum products, heavy metal wash waters, and others.
- Valicor treats more than 200 million gallons of wastewater and 20 million gallons of oil annually.

#### GEOGRAPHIC FOOTPRINT



#### SELECTED ACQUISITIONS

July 2017 Ultra Environmental Services

**"We intend to build on Valicor's excellent foundation by expanding services in our current facilities, launching new locations, and executing add-on acquisitions in a highly fragmented market."**  
- James Devlin, CEO, Valicor



#### GEOGRAPHIC FOOTPRINT



#### SELECTED ACQUISITIONS



Liquid Environmental Solutions (LES) has leveraged acquisitions to build its national footprint, which today comprises 54 collection branches and 20 wastewater treatment plants across 49 states. Waste sources treated include grease trap waste, industrial and manufacturing process waters, used cooking oil, and oily wastewaters.

- To date, LES has raised more than \$71 million in venture capital funding, including a \$31.6 million Series C minority growth investment led by ABS Capital Partners in July 2014.
- Stated capital plans include targeted acquisitions and greenfield expansion to grow the company's wastewater collection, treatment, and recycling network.

**"This is an outstanding opportunity to work with a strong, entrepreneurial management team and help them to continue to execute on their growth strategy."**  
- Phil Clough, Managing General Partners, ABS Capital Partners



# Spotlight On:

## Non-Hazardous Liquid Waste

### SELECTED RECENT INVESTMENT ACTIVITY IN LIQUID WASTE



In April 2017, Gryphon Investors acquired Wind River Environmental (WRE) from RFE Investment Partners in a leveraged buyout valued at \$250 million. Members of the WRE management team, including CEO John O'Connell, participated in the transaction and retained a significant ownership stake in the company. Kevin Walbridge will serve as Chairman. Walbridge is a former COO of Republic Services.

#### GEOGRAPHIC FOOTPRINT



#### SELECTED ACQUISITIONS



- WRE is a vertically integrated provider of non-hazardous liquid environmental waste solutions serving residential, commercial, and municipal customers. Waste streams serviced include septic, grease trap, and green waste.
- WRE has been actively consolidating the industry, having completed more than 60 acquisitions to broaden its capabilities and geographic reach.

**“We are highly enthusiastic about providing capital and expertise to Wind River’s management team as they continue to build this market-leading platform through the execution of organic initiatives and add-on acquisitions.”**  
- Phil Petrocelli, Partner, Gryphon Investors



In August 2016, Gryphon Investors acquired HEPACO from Carousel Capital, which exited its investment after nearly five years of ownership. HEPACO senior managers including CEO Ron Horton, Jr. retained a significant equity stake in the company.

#### GEOGRAPHIC FOOTPRINT



Dark green shaded areas denote location of centralized waste treatment facility

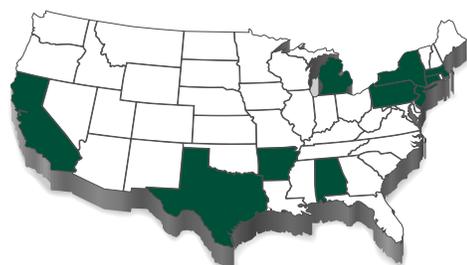
- HEPACO provides a broad range of critical environmental services ranging from emergency response and environmental remediation to wastewater treatment and hazardous waste management for customers in diverse end markets, including rail, oil and gas, transportation, power and utility, and manufacturing.
- The company operates wastewater facilities in Georgia and Virginia.

**“We are excited to partner with HEPACO, a market leader in the Mid-Atlantic and Southeastern United States, and to provide capital and expertise to support management’s organic growth initiatives and make acquisitions.”**  
- Alex Earls, Partner, Gryphon Investors



McLarty Capital Partners is an investor in Denali Water Solutions, which is involved in the transportation, collection, processing, conversion, and disposal of organic waste streams for municipal and industrial customers. The company has been operating in the organic waste industry for more than 20 years.

#### GEOGRAPHIC FOOTPRINT



#### SELECTED ACQUISITIONS



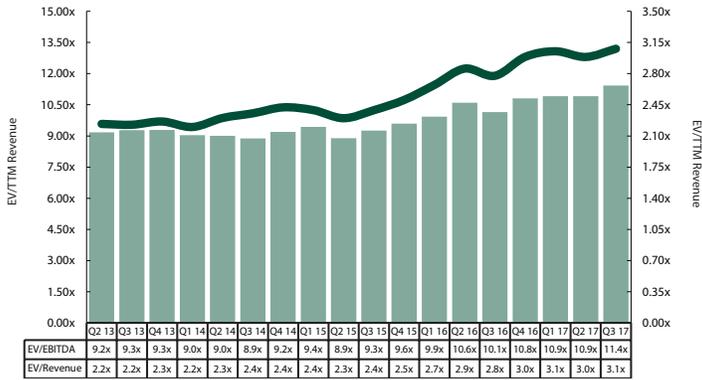
- Denali merged with WeCare Organics in October 2016, expanding its footprint in the northeastern U.S.
- Denali processes more than one million tons of wastewater residuals annually.



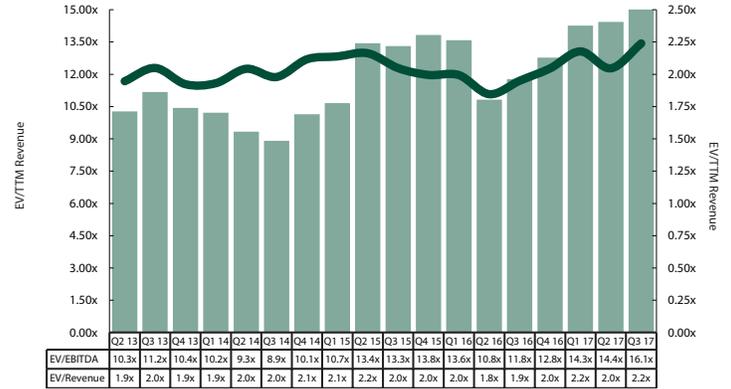
# Environmental Services Insider Industry Valuations

## Relative Valuation Trends

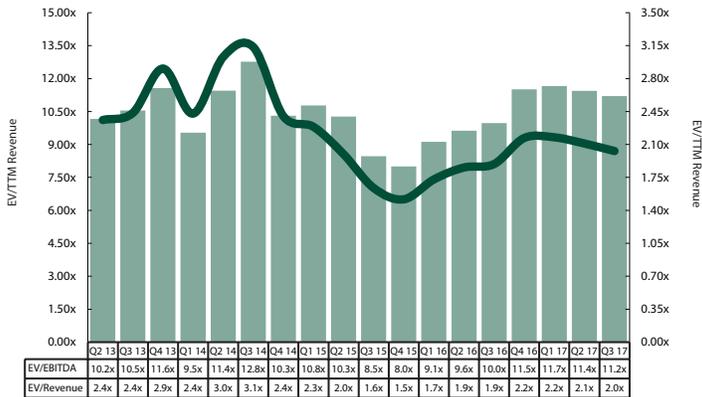
### Solid Waste - Vertically Integrated



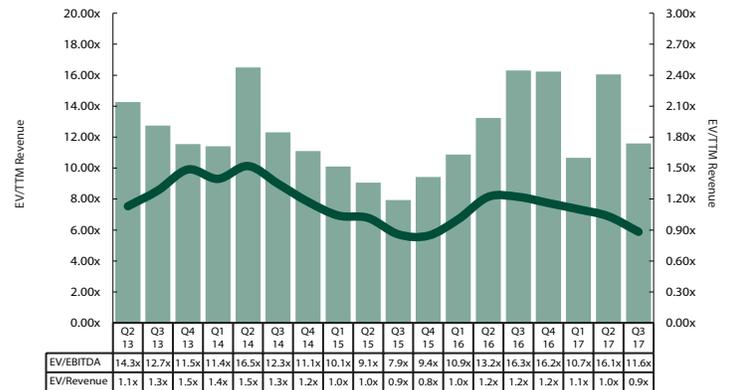
### Solid Waste - Waste-to-Energy



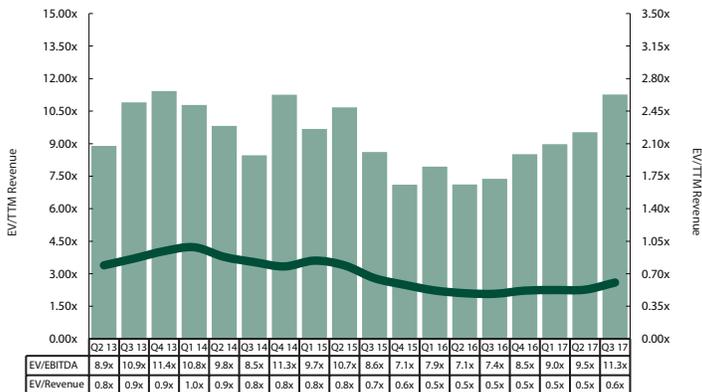
### Special Waste - Broadly Diversified



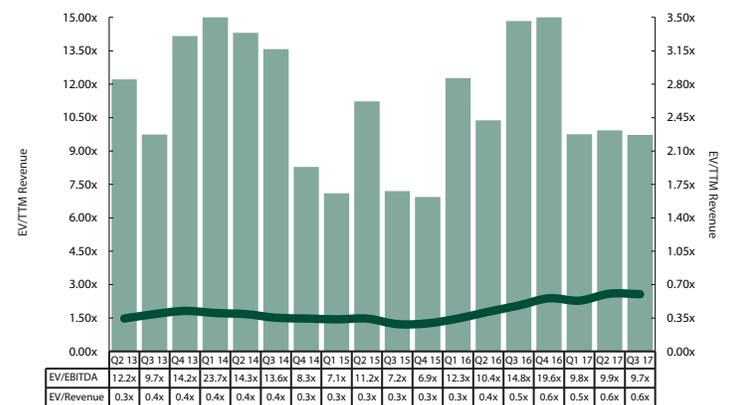
### Special Waste - Other



### Environmental Engineering & Consulting



### Metals Recycling



BGL Environmental Services indices defined on Page 34.  
SOURCE: S&P Capital IQ.



# Environmental Services Insider Industry Valuations

## Relative Valuation Trends

(\$ in millions, except per share data)

Company Name	Country	Ticker	Current Stock Price (1)	% of 52W High	Market Capitalization (2)	Enterprise Value (3)	Enterprise Revenue	Enterprise Value / TTM EBITDA	Total Debt/ EBITDA	TTM Revenue	TTM Margins Gross	TTM Margins EBITDA
<b>SOLID WASTE (VERTICALLY-INTEGRATED)</b>												
Waste Management, Inc.	United States	NYSE:WM	\$77.08	97.2%	\$33,918	\$42,964	3.0x	11.1x	2.3x	\$14,125	37.6%	27.3%
Republic Services, Inc.	United States	NYSE:RSG	63.32	94.3%	21,324	29,071	3.0x	10.7x	2.9x	9,708	38.4%	28.0%
Waste Connections, Inc.	Canada	NYSE:WCN	69.86	98.7%	18,418	22,034	3.7x	18.4x	3.2x	4,400	41.3%	31.1%
Advanced Disposal Services, Inc.	United States	NYSE:ADSW	24.87	96.7%	2,197	4,120	3.7x	3.4x	3.2x	1,443	37.5%	27.4%
Casella Waste Systems, Inc.	United States	NasdaqGS:CWST	18.16	94.9%	763	1,264	2.2x	11.2x	4.5x	583	32.5%	19.4%
<b>Median</b>			<b>\$63.32</b>	<b>96.7%</b>	<b>\$18,418</b>	<b>\$22,034</b>	<b>3.0x</b>	<b>11.1x</b>	<b>3.2x</b>	<b>\$4,400</b>	<b>37.6%</b>	<b>27.4%</b>
<b>Mean</b>			<b>\$50.66</b>	<b>96.4%</b>	<b>\$15,324</b>	<b>\$19,891</b>	<b>3.1x</b>	<b>11.0x</b>	<b>3.2x</b>	<b>\$6,052</b>	<b>37.4%</b>	<b>26.6%</b>
<b>SOLID WASTE (WASTE-TO-ENERGY)</b>												
Covanta Holding Corporation	United States	NYSE:CVA	\$15.20	92.1%	\$1,985	\$4,773	2.8x	16.1x	9.6x	\$1,706	30.8%	17.4%
Renewi plc	United Kingdom	LSE:RWI	1.37	90.2%	1,099	1,779	1.7x	17.9x	7.4x	976	15.9%	10.2%
<b>Median</b>			<b>\$8.29</b>	<b>91.2%</b>	<b>\$1,542</b>	<b>\$3,276</b>	<b>2.3x</b>	<b>17.0x</b>	<b>8.5x</b>	<b>\$1,341</b>	<b>23.4%</b>	<b>13.8%</b>
<b>Mean</b>			<b>\$8.29</b>	<b>91.2%</b>	<b>\$1,542</b>	<b>\$3,276</b>	<b>2.3x</b>	<b>17.0x</b>	<b>8.5x</b>	<b>\$1,341</b>	<b>23.4%</b>	<b>13.8%</b>
<b>SPECIAL WASTE (BROADLY DIVERSIFIED)</b>												
Veolia Environnement S.A.	France	ENXTPA:VIE	\$23.54	98.6%	\$12,937	\$24,267	0.8x	7.6x	4.9x	\$28,410	16.9%	11.2%
Stericycle, Inc.	United States	NasdaqGS:SRCL	\$70.71	80.4%	6,034	8,862	2.5x	11.4x	3.7x	3,607	44.2%	21.6%
Clean Harbors, Inc.	United States	NYSE:CLH	\$56.16	91.1%	3,210	4,498	1.6x	10.8x	4.2x	2,863	30.0%	14.5%
US Ecology, Inc.	United States	NasdaqGS:ECOL	\$2.40	94.0%	1,144	1,419	3.0x	13.3x	2.6x	478	30.0%	22.3%
<b>Median</b>			<b>\$54.28</b>	<b>92.6%</b>	<b>\$4,622</b>	<b>\$6,680</b>	<b>2.0x</b>	<b>11.1x</b>	<b>3.9x</b>	<b>\$3,235</b>	<b>30.0%</b>	<b>18.0%</b>
<b>Mean</b>			<b>\$50.70</b>	<b>91.0%</b>	<b>\$5,831</b>	<b>\$9,761</b>	<b>2.0x</b>	<b>10.8x</b>	<b>3.8x</b>	<b>\$8,840</b>	<b>30.3%</b>	<b>17.4%</b>
<b>SPECIAL WASTE (OTHER)</b>												
Darling Ingredients Inc.	United States	NYSE:DAR	\$16.72	89.7%	\$2,753	\$4,478	1.3x	10.5x	4.1x	\$3,518	21.6%	12.2%
Secure Energy Services Inc.	Canada	TSX:SES	\$6.73	69.7%	1,099	1,266	0.8x	16.5x	2.3x	1,514	9.2%	5.1%
Heritage-Crystal Clean, Inc.	United States	NasdaqGS:HCCI	21.55	97.0%	487	491	1.4x	11.9x	0.7x	355	25.6%	11.6%
Renewable Energy Group, Inc.	United States	NasdaqGS:REGI	11.70	86.3%	453	639	0.3x	6.2x	2.7x	2,139	8.3%	4.8%
Newalta Corporation	Canada	TSX:NAL	0.61	28.8%	54	325	1.7x	11.1x	<b>8.9x</b>	180	29.3%	16.3%
Perma-Fix Environmental Services, Inc.	United States	NasdaqCM:PESI	3.70	72.8%	43	48	0.9x	<b>22.5x</b>	2.1x	52	19.9%	4.1%
Vertex Energy, Inc.	United States	NasdaqCM:VTNR	0.76	42.2%	25	66	0.5x	<b>147.0x</b>	<b>37.8x</b>	131	15.8%	0.3%
<b>Median</b>			<b>\$6.73</b>	<b>72.8%</b>	<b>\$453</b>	<b>\$491</b>	<b>0.9x</b>	<b>11.1x</b>	<b>2.3x</b>	<b>\$355</b>	<b>19.9%</b>	<b>5.1%</b>
<b>Mean</b>			<b>\$8.82</b>	<b>69.5%</b>	<b>\$702</b>	<b>\$1,045</b>	<b>1.0x</b>	<b>11.2x</b>	<b>2.3x</b>	<b>\$1,127</b>	<b>18.5%</b>	<b>7.8%</b>
<b>ENVIRONMENTAL ENGINEERING &amp; CONSULTING</b>												
AECOM	United States	NYSE:ACM	\$35.97	88.3%	\$5,637	\$8,943	0.5x	11.3x	4.9x	\$17,670	3.5%	4.5%
Tetra Tech, Inc.	United States	NasdaqGS:TTEK	48.20	99.3%	2,726	2,913	1.4x	13.4x	1.5x	2,031	17.2%	10.7%
ARCADIS NV	Netherlands	ENXTAM:ARCAD	21.17	91.0%	1,829	2,445	0.6x	11.3x	4.2x	3,764	17.4%	5.7%
Chicago Bridge & Iron Company N.V.	Netherlands	NYSE:CBI	15.72	43.0%	1,590	3,227	0.3x	<b>348.0x</b>	<b>198.8x</b>	9,495	3.0%	0.1%
Cardno Limited	Australia	ASX:CDD	1.06	90.0%	501	513	0.6x	NM	NM	907	4.0%	-1.1%
Great Lakes Dredge & Dock Corporation	United States	NasdaqGS:GLDD	5.30	97.2%	325	735	1.0x	9.6x	5.5x	760	11.1%	10.0%
<b>Median</b>			<b>\$18.44</b>	<b>90.5%</b>	<b>\$1,710</b>	<b>\$2,679</b>	<b>0.6x</b>	<b>11.3x</b>	<b>4.6x</b>	<b>\$2,897</b>	<b>7.5%</b>	<b>5.1%</b>
<b>Mean</b>			<b>\$21.24</b>	<b>84.8%</b>	<b>\$2,102</b>	<b>\$3,129</b>	<b>0.7x</b>	<b>11.4x</b>	<b>4.1x</b>	<b>\$5,771</b>	<b>9.4%</b>	<b>5.0%</b>
<b>E-WASTE &amp; METALS RECYCLING</b>												
Commercial Metals Company	United States	NYSE:CMC	20.10	81.6%	\$2,327	\$3,116	0.6x	10.2x	3.5x	\$4,816	13.1%	6.4%
Sims Metal Management Limited	United States	ASX:SGM	10.37	81.0%	2,083	1,784	0.4x	10.0x	0.0x	3,906	13.2%	4.6%
Schnitzer Steel Industries, Inc.	United States	NasdaqGS:SCHN	28.65	93.6%	754	928	0.6x	10.3x	2.0x	1,584	13.3%	5.7%
ALBA SE	Germany	DB:ABA	75.91	94.4%	747	607	1.0x	<b>105.9x</b>	0.9x	598	7.4%	1.0%
<b>Median</b>			<b>\$24.38</b>	<b>87.6%</b>	<b>\$1,418</b>	<b>\$1,356</b>	<b>0.6x</b>	<b>10.2x</b>	<b>1.4x</b>	<b>\$2,745</b>	<b>13.2%</b>	<b>5.1%</b>
<b>Mean</b>			<b>\$33.76</b>	<b>87.7%</b>	<b>\$1,478</b>	<b>\$1,608</b>	<b>0.7x</b>	<b>10.2x</b>	<b>1.6x</b>	<b>\$2,726</b>	<b>11.8%</b>	<b>4.4%</b>

NOTE: Figures in bold and italic type were excluded from median and mean calculation.

(1) As of 10/12/2017.

(2) Market Capitalization is the aggregate value of a firm's outstanding common stock.

(3) Enterprise Value is the total value of a firm (including all debt and equity).

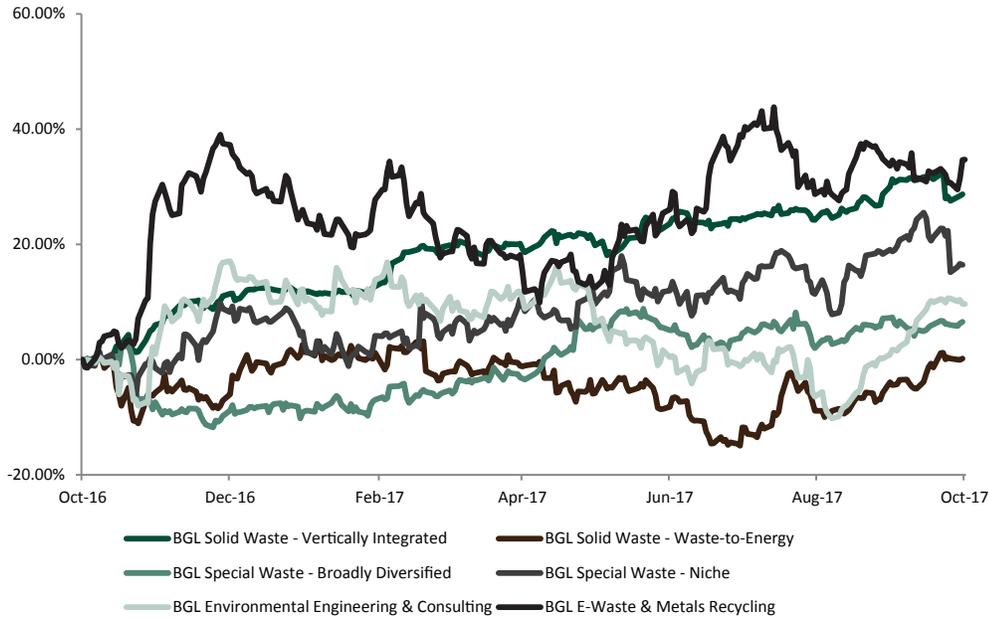
SOURCE: S&P Capital IQ.



# Environmental Services Insider Industry Valuations

## Sector Performance

### By Sector



	1 Year
Solid Waste - Vertically Integrated	28.7%
Solid Waste - Waste-to-Energy	.16%
Special Waste - Broadly Diversified	6.6%
Special Waste - Other	16.4%
Environmental Engineering & Consulting	9.6%
E-Waste & Metals Recycling	34.7%

### Overall Market



	1 Year
S&P 500	19.6%
DJIA	26.2%
NASDAQ	25.9%

Index: October 11, 2016 = 100.

SOURCE: S&P Capital IQ.



# Global Environmental and Industrial Services

## WASTE & RECYCLING

### SOLID WASTE

- Collection and Hauling
- Transfer Stations
- Material Recovery Facilities
- Landfills

### SPECIAL WASTE

- Liquids
- ODS and Other Hazardous Streams
- Collection, Handling, and Disposal
- General ES
- Emergency Response

### E-WASTE/METALS

- End-of-Life Destruction
- Remanufacturing
- Asset Management
- Data Destruction
- Scrap Metal

### WASTE-TO-ENERGY

- Gasification
- Anaerobic Digestion
- Oil Re-Refining
- Fats, Oils, and Greases
- Biogas and Biofuels
- Renewables

## ENVIRONMENTAL ENGINEERING & CONSULTING

- Environmental Engineering and Consulting
- Auditing, Compliance, and Testing
- Reclamation and Remediation
- Sustainability

## INDUSTRIAL SERVICES

### ASSET-INTENSIVE

- General Plant and Equipment Maintenance
- Turnaround and Outage
- Maintenance and Fabrication
- Infrastructure Services

### ASSET-LIGHT

- Testing, Inspection & Certification (TIC), and Integrity Management Services
- Safety and Compliance
- Architecture and Engineering

## Representative Transactions

 — recapitalized by —  — acquired by — 	 — acquired by —  — acquired by — 	 — acquired —  — acquired by — 	Sellside Advisor to  — a portfolio company of —  — acquired by — 	 — recapitalized by —  — acquired by — 	Sellside Advisor to  — a portfolio company of —  — acquired by — 
Select Assets of  — acquired by —  — acquired by — 	 — acquired by —  — acquired by — 	Select Heating Assets of  — acquired by —  — acquired by — 	Select Oilfield Waste Processing and Disposal Assets — acquired by —  — acquired by — 	 — a portfolio company of —  — acquired by — 	 — obtained financing — provided by —  and   — acquired by — 

## Who We Are

### Leading Independent Firm

- Independent investment banking advisory firm focused on the middle market
- Senior bankers with significant experience and tenure; partners average over 20 years of experience
- Offices in Chicago, Cleveland, and Philadelphia
- Founding member and exclusive U.S. partner of Global M&A Partners, Ltd., the world's leading partnership of investment banking firms focusing on middle market transactions
- Deep industry experience across core sectors of focus, including: Business Services, Consumer, Environmental & Industrial Services, Healthcare & Life Sciences, Industrials, and Real Estate

### Comprehensive Capabilities

<b>M&amp;A ADVISORY</b> Sell-Side Advisory Acquisitions & Divestitures Public & Private Mergers Special Committee Advice Strategic Partnerships & Joint Ventures Fairness Opinions & Fair Value Opinions	<b>CAPITAL MARKETS</b> All Tranches of Debt & Equity Capital for: Growth Acquisitions Recapitalizations Dividends
<b>FINANCIAL ADVISORY</b> General Financial & Strategic Advice Balance Sheet Restructurings Sales of Non-Core Assets or Businesses \$363 Auctions	<b>RESEARCH</b> Primary Research Industry Benchmarking Operating Advisor Network White Papers Industry Surveys

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