



American Recycler

NewsVoice of Salvage, Waste and Recycling

AmericanRecycler.com

FOCUS: Waste

Battery recycling and safety issues

by MAURA KELLER

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As battery engineering and technology continue to evolve, the safety of battery recycling is top of mind for many recycling companies.

According to Andrew Weins, chief operating officer of JDog Junk Removal & Hauling Unlimited, looking back 20 years, landfills used to take all kinds of materials including batteries, and there really was no process or safety protocol in place for how to handle their proper disposal.

“Landfills are not supposed to take hazardous batteries, but we haven’t seen many effective processes to ensure they do not end up in the landfill,” Weins said. “Over the past decade, there’s been a huge increase in portable electronic devices on the market that require hazardous rechargeable lithium batteries, ultimately causing them to be discarded. This has been an impetus for change in the industry. To help keep up, the technology used to recycle batteries has become more advanced so that less energy is used to restore batteries and they can be used again.”

As Weins explained, the industry knows that rechargeable batteries contain a number of chemicals including cadmium, lead, mercury, nickel, lithium and electrolytes.

“When the batteries end up in landfills they start to break down and release these chemicals, which end up in landfill leakage,” Weins said.



Lowe's offers free in-store battery collection kiosks.

Different batteries can be more volatile than others. Rechargeable batteries almost always contain nickel cadmium, which, according to the EPA, can leach into the soil, water, and air in landfills or incinerators. This leakage can affect the water table or eventually reach the ocean. Additionally, lithium reacts in a volatile way when exposed.

Safety has become a very big issue for batteries. As Gary Casola, technical sales specialist at Aircycle, Inc. a TerraCycle company explained, in the last decade much more attention has been given to the proper insulation of batteries at the generator’s facility.

“The emphasis has been put on making sure each and every battery is insu-



The biggest factor for improving the proper disposal of batteries is consumer education and making sure people dispose of batteries in the right place to begin with.

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lated and is placed into a container that has been labeled with the type of battery in that container,” Casola said. “The industry recyclers know, as do the transporters of batteries, that trucks must carry the proper placarding and the batteries are to be packaged properly in insulating terminals.”

For example, lead acid batteries should be palletized using a thin card board insulation between the layers of batteries and then stretch wrap around the batteries to secure them along with banding them to the pallet.

Karin Harris, chief executive officer of eGreen IT Solutions believes there are better guidelines and awareness of the dangers within the different types of batteries that weren’t realized in the past.

“The chemistry of batteries is changing to make the handling much safer,” Harris said.

While that may be true, according to Weins, the safety protocol for battery recycling has largely stayed the same. The EPA started its Call2Recycle program in 1994, outside of the restrictions of where and who can dispose of them.

The batteries should still be sorted by type – non-hazardous (alkaline, carbon zinc, zinc-air), hazardous (lithium/lithium ion, nickel-cadmium, nickel-metal hydride, sealed lead acid), and those banned from most landfills (mercury oxide, lead acid vehicle batteries).

“Waste and recycling companies must pay close attention and recognize

which batteries they have to ensure they’re sorted safely on the front end,” Weins said. “To follow this important safety protocol, at our warehouse we have crates for different battery types and electronic devices.”

A common mistake that Weins sees people make when it comes to battery recycling is not taking the time to fully assess the state of batteries before disposing of them.

“Owning a junk removal business, we come across batteries on each and every residential and commercial job,” Weins said. “Something we do that many waste and recycling companies don’t – when we take batteries out of items, like remotes, tools, or toys, we see if they’re damaged or punctured in any way.”

Once a battery is compromised, it’s considered hazardous and requires special handling. “We get the battery into sand or kitty litter as soon as possible,” Weins said. “These batteries then have to be bagged or boxed before going to a certified e-waste recycler.”

Isaac Weins, director of training at JDog Junk Removal & Hauling United said that he and his team have also heard of situations where companies leverage a third party to specifically handle the recycling of batteries and electronic devices, but don’t take the time to fully vet the vendor.

“If the third-party is not certified as an e-waste recycler and they get caught

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Technology changes load monitoring



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Strategies developed in California to meet goals

The California Resource Recovery Association hosted the largest state conference on waste reduction. This convening of key material management industry leaders comes at a crucial time as China moves to limit the types and volumes of post-consumer materials they will receive, which is having a negative effect on the recycling facility operators who now have fewer places to send materials for recycling. There was extensive dialogue and planning for new remanufacturing facilities in California to manage materials safely and keep the jobs in California.

During the conference, the California Product Stewardship Council (CPSC) honored companies, several based in the San Francisco Bay Area, for their innovative environmental efforts during the organization's 9th Annual Arrow Awards ceremony. In addition to the Arrow Awards, CPSC recognized the San Francisco Department of the Environment, the local government leader in innovative materials management policies as well as Recology for working with San Francisco and other California local governments to help achieve the highest recycling rates possible, while working to reduce waste generating processes and products, and Assembly-member Kansen Chu for authoring AB 1158 in 2017 to increase carpet recycling.

Smarter Sorting is the recipient of the 2018 Golden Arrow Award for overall excellence in product stewardship. Smarter Sorting is a data and technology company that used machine learning to build the world's first smart chemical database. Smarter Sorting works with cities and retailers to divert consumer chemical products, previously labeled as hazardous waste, and creates reuse opportunities.

NewGen Surgical received the 2018 Green Arrow Award for system and design innovations. NewGen Surgical redesigns and manufactures medical devices and products that significantly minimize plastic waste from operating rooms – replacing single-use disposable plastic products with ones created with upcycled materials. Their Small Change, Big Impact EPPTM program engages healthcare systems to measurably eliminate tons of plastic waste from the supply chain.

California Electronic Asset Recovery (CEAR) is the winner of the 2018 Bow & Arrow Award for coalition building for creative partnerships and demonstrating the inter-dependence amongst stakeholders. CEAR works closely with local governments to create more efficient collection and recycling standards. CEAR's unique recycling process, which uses significantly less energy than the most common practices for e-waste recycling, has become a model for companies across the United States.

Challenge set to boost residential recycling

The PepsiCo Foundation and national nonprofit The Recycling Partnership today announced the launch of "All In On Recycling," the largest ever industry wide residential recycling challenge to make recycling easier for 25 million families across the country – providing them with the resources they need to recycle more and recycle better.

The PepsiCo Foundation is providing \$10 million in funding to jumpstart the historic challenge, which is one of the largest-ever public gifts of its kind. The goal of the challenge is to raise \$25 million in total donations from leading businesses, companies, and organizations. In addition to contributions from other corporations, the more than 2,800 communities that participate in the initiative are expected to triple the collective investment, catalyzing roughly \$75 million in municipal funding, and bringing the total amount of support to \$100 million.

"I've always believed corporations do not operate in a vacuum – we have responsibilities to the communities we serve," said Indra Nooyi, chairman and chief executive officer of PepsiCo. "Our collaboration with The Recycling Partnership represents a major step toward fulfilling those responsibilities by helping reverse the decline in recycling rates for aluminum and many common plastics. I hope other corporations across our industry and beyond will join us and commit to being All In On Recycling."

Currently, due to lack of infrastructure, widely varying municipal recycling programs, and low awareness of proper recycling practices, more than half of the material that could be recycled from U.S. households is lost. However, the problem is not due to lack of desire: 94 percent of Americans want to recycle more, and would, with easily accessible recycling containers and clear information about proper recycling practices.

The Recycling Partnership estimates the "All In On Recycling" challenge will help the U.S. capture 1.9 million tons of quality recyclable materials over the next 5 years, including 7 billion bottles and cans. This would result in a total greenhouse gas avoidance of 5.5 million tons of CO₂ – the equivalent of removing more than 1 million cars off the road for a year.

Half of the total funds raised by this challenge are expected to help provide: 1) Curbside carts to more than 550,000 households – a proven way to double the number of recyclables recovered; and 2) The missing infrastructure needed to recover recyclables from multi-family homes such as apartment buildings and condos, which is one of the most challenging segments of the population to serve. The other half of the funding will support critical recycling education and operational programs that will increase collection of recyclables while reducing contamination.

The plan is to utilize some of the funds raised from the bold initiative to provide recycling solutions across the country to cities such as Miami, Florida, and El Paso, Texas, as well as the State of Michigan and the Central Ohio region – to name a few places.

"On behalf of Central Ohio's recycling programs, we are grateful that The Recycling Partnership and the PepsiCo Foundation have created the All In On Recycling challenge," said Ty Marsh, executive director, The Solid Waste Authority of Central Ohio. "Communities in Central Ohio still need funding for curbside recycling carts in order to provide the best possible access to recycling for our residents. We hope other major corporations join this challenge to reach \$25 million in total funding so that thousands of cities and towns across the country can make improvements to their recycling systems."

This largest-ever major residential recycling initiative is part of PepsiCo's signature sustainability program, Performance with Purpose, which aims to deliver sustainable, long-term growth while leaving a positive imprint on society and the environment. By 2025, PepsiCo's goal is to design 100 percent of their packaging to be recyclable, compostable or, biodegradable; increase recycled materials in its plastic packaging; reduce packaging's carbon impact; and, in partnership with the PepsiCo Foundation, work to increase recycling rates.

NY accepts online grant applications

New York Department of Environmental Conservation (DEC) is now accepting online grant applications for Recycling Education, Coordination, Promotion and Planning (RECPP).

Under revised regulations (6 NYCRR Subpart 369-3), monies will be made available in 2018 for new grants to assist local governments to pay for recycling education, coordination, promotion and planning. RECPP funding will reimburse up to 50 percent of eligible "soft costs" of recycling and waste prevention. Eligible projects include costs of salary for a municipal recycling coordinator, publications, education and outreach tools, recycling advertising, recycling websites, and promotional items. Approximately \$3 million will be made available for MWRR-RECPP grants.

DEC will be accepting applications only during the months of August, September and October 2018 for projects to be completed during January-December 2019. During the application period, applicants can initiate a proposal in the New York State Grants Gateway, by going to the Grant Opportunity Portal.

Applications received by DEC during the three month application period will be reviewed, scored and, if acceptable, will be approved for grants during the final two months of 2018. For more information, visit DEC's Grants for Recycling Coordination and Education Projects website.

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CARE diverts over 394 million pounds of carpet

Carpet America Recovery Effort (CARE) members diverted over 394 million pounds of carpet from U.S. landfills in 2017, down 19 percent from 2016, according to their 2017 Annual Report.

Gross collections of post-consumer carpet in 2017 was down 22 percent compared to 2016.

Across the U.S., of the carpet diverted to recycling, 180 million pounds were recycled into carpet and other consumer products, 107 million pounds were sent back to the landfill, and 90 million pounds went to waste-to-energy facilities and cement kilns. 2017 was another challenging year for CARE in terms of marketplace activity and demand for various fiber types. China's National Sword initiative is creating problems for all recycling, including carpet.

California represented a bright spot in the Report: while other regions saw significant drops in gross collections, California's share of national volume was 41 percent, a significant increase in 2017. The California Carpet Stewardship Program's 2017 Annual Report (different from the CARE national HQ's report) will be released in September.

NJ DEP makes applications available for environmental awards program

New Jersey's leaders in both public and private sectors are invited to submit nominations showcasing their environmental accomplishments by applying for consideration in the annual Governor's Environmental Excellence Awards program.

The excellence awards honor outstanding environmental performance, programs and projects from around the state. Awards are given to individuals, businesses, institutions, communities, organizations, educators and youth who have made significant contributions to protecting the environment in New Jersey. Since its establishment in 2000, the program has honored 170 winners for their environmental achievements.

Nominations may be submitted through October 5 in these categories: clean air, water resources, healthy ecosystems and habitats, innovative technology, land conservation, healthy and sustainable communities, healthy and sustainable businesses, and two categories in environmental education: educator-led and student-led projects.

The excellence awards program is sponsored by the DEP, New Jersey Infra-

structure Bank (formerly known as the New Jersey Environmental Infrastructure Trust), and the New Jersey Corporation for Advanced Technology. Award winners will be honored at a luncheon in December in Trenton, or elsewhere in Mercer County.

The New Jersey Infrastructure Bank is an independent State Financing Authority that partners with peer agencies to provide low-interest-rate financing of infrastructure projects throughout the state. The bank, in partnership with the DEP, administers the New Jersey Water Bank to make low-interest-rate loans to governmental and public water systems for wastewater, storm water and drinking water infrastructure projects to preserve and protect water quality and public health. Beginning in state fiscal year 2019 the bank will partner with the state Department of Transportation for transportation infrastructure projects. The bank also has supported sustainable economic development throughout the state.

For a 2018 nominating application and other awards information, visit <https://www.nj.gov/dep/awards/>

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Events Calendar

September 11th-13th

Missouri Recycling Association Conference. Stoney Creek Hotel and Conference Center, Independence, Missouri. 866-667-2777 | www.moraconference.org

October 17th-19th

Association of Energy Engineers 41st World Energy Engineering Congress 2018. Charlotte Convention Center, Charlotte, North Carolina. 770-447-5083 | www.energycongress.com

October 24th-25th

Canadian Waste & Recycling Expo. Enercare Centre, Toronto, Ontario, Canada. 416-263-3000 | www.messefrankfurt.ca

October 28th-30th

WV Educational Conference on Litter Control & Solid Waste Mgmt. Stonewall Resort, Roanoke, West Virginia. 304-573-5194 | www.awvswa.com

October 30th-31st

Northeast Recycling Council (NERC) Fall Conference. Sheraton Hartford South Hotel, Rocky Hill, Connecticut. 802-254-3636 | www.nerc.org

November 1st-3rd

Automotive Recyclers Association (ARA) Annual Convention and Expo. Walt Disney World Dolphin Resort, Lake Buena Vista, Florida. 571-208-0428 | www.araexpo.org

November 7th-8th

The Tire and Rubber Association of Canada - Rubber Recycling Symposium. Sheraton on the Falls Hotel, Niagara Falls, Ontario Canada. 519-249-0366 | www.tracanada.ca

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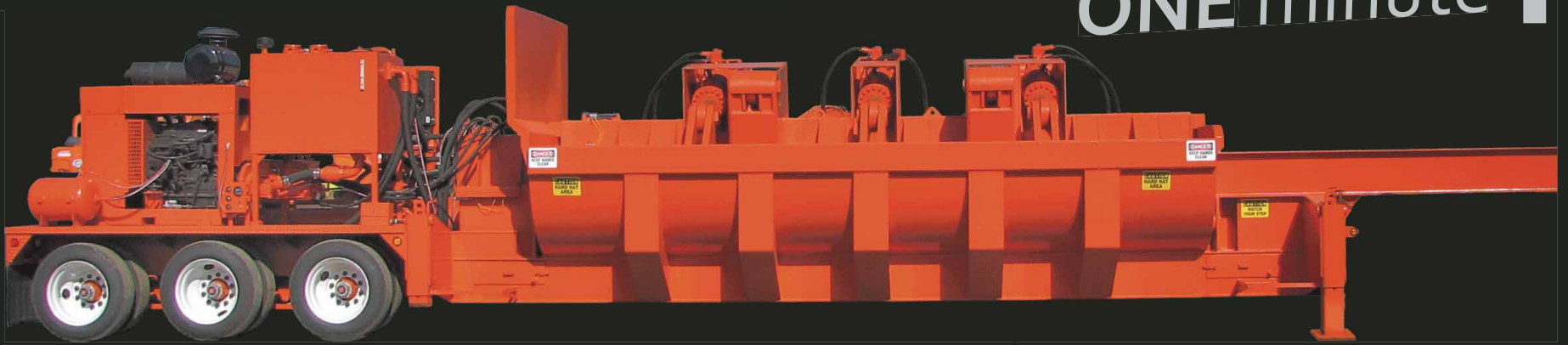
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Ohio passes Slow Down to Get Around legislation

Ohio Governor John Kasich signed SB 127, legislation that requires drivers to slow down and safely change lanes when approaching solid waste and recycling vehicles. Ohio is now the 21st state to pass this vital legislation commonly known as Slow Down to Get Around (SDTGA). Safety is a priority for the National Waste and Recycling Association (NWRA) which represents America's private waste and recycling industry.

The NWRA Ohio Chapter worked with key stakeholders to develop the bill which was sponsored by Ohio State Senator Frank LaRose, chairman of the Transportation, Commerce and Workforce Committee.

"Driving safely should be a top priority for anyone getting behind the wheel of a vehicle. We all want to safely get home to our families. This legislation carries an



important message – take your time and slow down around garbage trucks," said Jim Thaxton, Rumpke Waste & Recycling. On the day the bill was signed, David Evans, a 15 year employee of Rumpke Waste & Recycling was killed while collecting waste in Middleton, Ohio when he was hit by a truck.

Over the past four years, NWRA member companies and its chapters nationwide have successfully championed "Slow Down to Get Around" legislation. A ceremonial bill signing is expected later this year. The law will take effect October 28, 2018.

Competition opens for NERC's environmental award

The second year of the Northeast Recycling Council's (NERC) Environmental Sustainability Leadership Award competition has begun. The award will recognize an individual or organization for the impact they have made on sustainable materials management within the NERC 11-state region. Applications for the competition will be accepted through September 12.

To be eligible, an organization or individual must be located within NERC's 11-member states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont.

Batteries

■Continued from Page 1

for improper handling of materials, you could get fined for providing these items to them," Isaac Weins said. "It's important to take the time to make sure the person or company is reputable and has the appropriate paperwork to prove certification. Without this criteria, they're not legally allowed to handle batteries and other materials that could be hazardous."

In addition, Harris said she commonly sees poor packaging and recycling companies not taping the leads and storing the batteries longer than what is permitted (normally one year).

"Proper storage of different battery chemistries and types and keeping battery chemistries separated upon receipt at the processing facility is paramount," Casola said. "Also educating the generator to separate battery types and chemistries and using a different container for collecting each type of battery is good education and information to provide."

The biggest factor in improving the proper disposal of batteries is consumer education and making sure people put things in the right place to begin with. As Isaac Weins explained, batteries are so commonly used today but many consumers are unaware that even some small AAA batteries cannot be thrown away in the garbage because a fire may result due to improper handling.

"If consumers knew about the serious dangers associated with improper battery disposal, there would be immediate improvements in the recycling process," Isaac Weins said.

"We see continued technological advancements when it comes to the process for recycling batteries. There will be less

energy used and the materials required to produce batteries will improve, which will make the entire process more efficient. In the long term, an increase in the use of rechargeable batteries could result in fewer batteries needing to be recycled."

With batteries being one of the fastest growing waste streams due to the Internet of Things, Harris believes the industry will see stricter regulations especially with transportation of batteries to be recycled.

"On the other hand, I believe as we evolve, the chemistry involved will include safer elements that will make batteries less hazardous to handle and recycle," Harris said. "One of the problems we are going to have with recycling of batteries is that more items are being made with the battery imbedded and there are no automated ways to have these items taken apart to remove the battery before disposal."

Because much attention is given to the proper insulation of all battery chemistries, Casola said batteries received at most recycling facilities are already prepared for safe storage while awaiting processing.

Recycling facilities that are receiving batteries must immediately insulate terminals on batteries or process them right away. Should the recycling facility be sending certain battery chemistries downstream to another processor, those facilities must make sure that the batteries are properly packaged and insulated.

"Every generator of batteries should be advised by the company managing their batteries as to proper packaging and insulation of all battery chemistries," Casola said. "Providing this information to generators of batteries will help guide in the proper storing of batteries waiting to be picked up, the transportation of batteries to the processor and the storage of batteries awaiting processing."

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Coastal and waterway recycling grant offered

The Recycling Partnership, with support from a \$1 million donation from The Coca-Cola Foundation, has opened up a new coastal and waterways community grant program to help address the challenge of waste in waterways and help improve the collection of recyclables for reuse.

With the release of the RFP, The Recycling Partnership offers a unique opportunity for communities to apply for grant funding to support one of two kinds of recycling program improvements:

1. The conversion of a bin or bag-based curbside recycling collection program to a cart-based program; or
2. The implementation of a new curbside recycling program using cart-based collection.

“The purpose of this grant program is to advance recycling in communities located adjacent to America’s major waterways,” says Rob Taylor, technical assistance specialist, The Recycling Partnership. “And to assist with the implementation of programs and practices that will reduce litter and work to curtail marine debris.”

In addition to the implementation of one of these curbside program improvements, successful applicants

must conduct one or more additional initiatives to address litter in their communities. Grant funding will be made available to support qualifying litter clean-up activities. Additional funding may also be available to support the purchase of public space recycling receptacles for areas near waterways.

“The Coca-Cola Foundation places a high priority on supporting organizations like The Recycling Partnership that are substantially improving recycling in communities through infrastructure and education,” said Helen Smith Price, president, The Coca-Cola Foundation. “Through this new program, people living in coastal and waterway communities will be provided with the recycling program they need to prevent recyclables from entering waterways while also improving collection for future use.”

The first round of the grant is open now and closes September 21, 2018, with work to follow shortly after in the selected communities.

For a direct link to the grant application information, view this article on www.AmericanRecycler.com.

Myles: Suppose you loan Ralph \$10 dollars and he agrees to repay you at the rate of \$1 per week. How much money would you have after seven weeks?

*Jay: Nothing.
Myles: Nothing? You don't know very much about math!
Jay: You don't know much about Ralph.*

METAL RECYCLERS

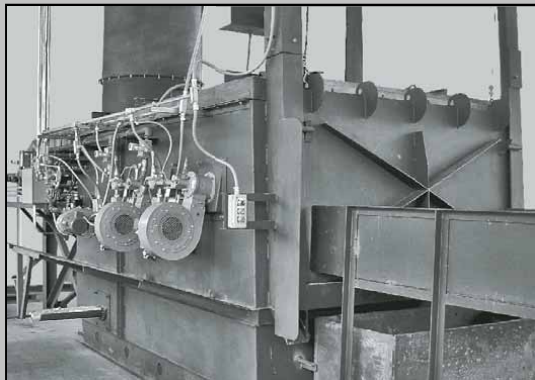
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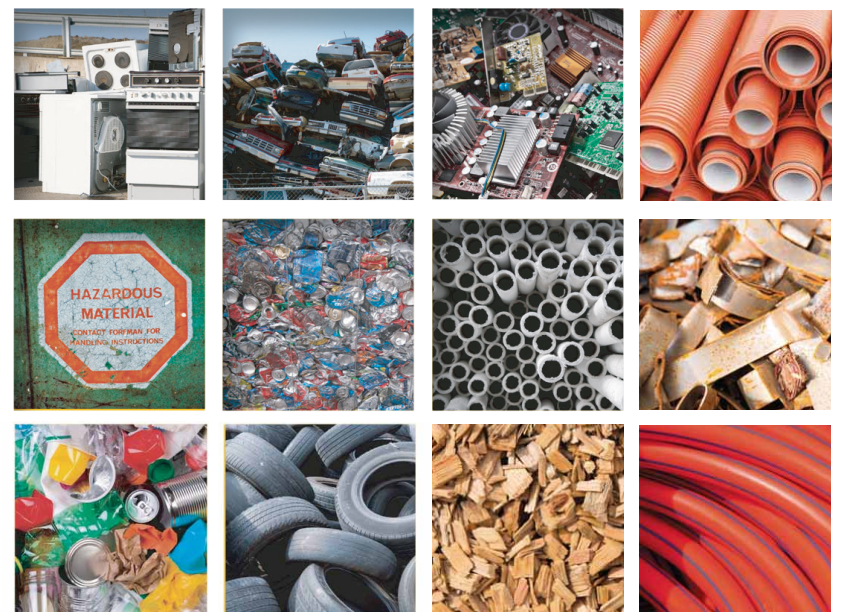
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PLASTICS

Disney expands efforts to reduce plastic waste

The Walt Disney Company's commitment to environmental stewardship goes back to its founding more than 60 years ago and progresses into the future with the announcement that by mid-2019, The Walt Disney Company will eliminate single use plastic straws and plastic stirrers at all owned and operated locations across the globe, amounting to a reduction of more than 175 million straws and 13 million stirrers annually.

In addition, over the next few years Disney will transition to refillable in-room amenities in hotels and on cruise

ships, reducing plastics in guest rooms by 80 percent.

Other efforts will be made to reduce the number of plastic shopping bags in Disney owned theme parks and cruise lines, offering guests the option to purchase reusable bags at a nominal price.

Finally, work will be completed that eliminates polystyrene cups across Disney's global business. These steps are part of a long-term effort to reduce single-use plastics, in combination with continued recycling and responsibly disposing single-use waste that cannot be eliminated.

The average age of people living in our military retirement community is 85. Recently, a neighbor turned 100 and had a big birthday party. Even his son turned up.

"How old are you?" a tenant asked. "I'm 81 years old," he answered. The tenant shook her head. "They sure grow up fast, don't they?"

International plastic recycling groups define recyclability

In an effort to provide a consistent metric to guide the efforts of sustainability for plastics in the Circular Economy, two of the leading global international recycling organizations have developed a global definition governing the use of the term "recyclable" as it relates to plastics packaging and products.

In the joint announcement, Ton Emans, president of Plastics Recycling Europe, and Steve Alexander, president and chief executive officer of The Association of Plastic Recyclers, pointed to the onslaught of recent announcements around commitments to package sustainability and recyclability.

"The use of the term 'recyclable' is consistently used with packages and products without a defined reference point," commented Alexander. "At the end of the day, recyclability goes beyond just being technically recyclable. There must be consumer access to a recycling program, a recycler must be able to process the material, and there must be an end market."

"Recently, we have seen many announcements regarding legislative measures on plastics products and pledges of the industry actors committing to making their products recyclable," added Emans. "As recyclers, we are a fundamental part of the solution to the issue of sustainability of plastics, and we need for the appropriate audiences to understand what is necessary to label a product or package 'recyclable'. We welcome these commitments and

encourage others to follow. Nevertheless, clear and universally endorsed definitions and objectives are needed."

Plastics must meet four conditions for a product to be considered recyclable:

1. The product must be made with a plastic that is collected for recycling, has market value and/or is supported by a legislatively mandated program.

2. The product must be sorted and aggregated into defined streams for recycling processes.

3. The product can be processed and reclaimed/recycled with commercial recycling processes.

4. The recycled plastic becomes a raw material that is used in the production of new products.

Innovative materials must demonstrate that they can be collected and sorted in sufficient quantities, must be compatible with existing industrial recycling processes or will have to be available in sufficient quantities to justify operating new recycling processes.

Although the definition is to be applied on a global scale, both groups understand the complexity of a global system of plastics recycling, and welcome comments from the plastics recycling industry and relevant stakeholders. This definition has been supported by Petcore Europe. A Global Definition of Recyclability is an integral step to harmonize the worldwide plastics recycling industry.

Loop launches integrated waste to Loop PET resin technology

Loop Industries, Inc. is designing a fully integrated manufacturing facility to upcycle waste PET and polyester fiber into virgin quality Loop™ PET resin and polyester fiber. Loop is in the process of engaging engineering partners to complete the integrated design.

"A fully integrated start-to-finish process will soon exist to commercialize Loop's innovative Generation II technology and help tackle the global plastic crisis," said Daniel Solomita, chief executive officer and founder of Loop. "These facilities will make it possible for all forms of waste PET and polyester fiber, even ocean plastics that have been

degraded by the sun and saltwater, to be fully recovered and upcycled into PET of the highest purity and performance quality."

This integrated innovation will join Loop's proprietary depolymerization technology with state of the art PET production processes, allowing plastic waste to be utilized as feedstock to produce Loop PET resin and facilitate the transition to a circular economy.

The technology will take waste PET and polyester fiber that can include PET plastic bottles and packaging of any color, transparency or condition, and carpet and other polyester textiles that may contain colors, dyes or additives and separate the PET from all contaminants to produce virgin quality FDA-approved food-safe Loop PET resin and polyester fiber.


This integrated manufacturing design will be the basis for Loop's commercialization strategy, which is now the company's focus in order to capitalize on its technology and respond to the demands of consumers, governments, non-governmental organizations and brand owners who have committed to ambitious sustainability targets.

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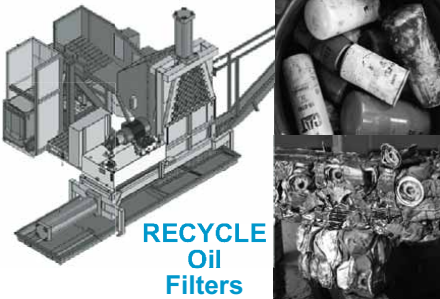



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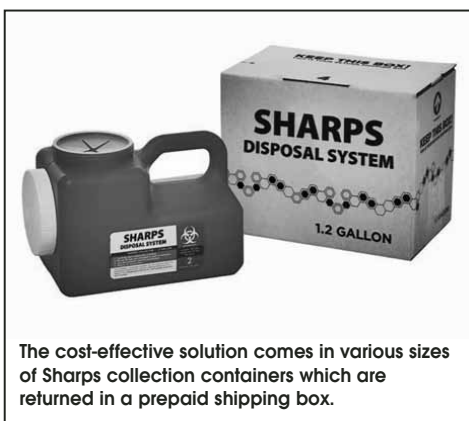
WASTE

TerraCycle adds MEDWASTE to recycling programs

Medical waste (in the form of used sharps) has become the latest difficult-to-recycle recycling program at TerraCycle, as the company continues to add waste streams to its product list. Utilizing EPA approved sterilization technology, the company has developed a system that provides contaminant exposure protection and high-efficiency material recovery.

The regulated waste division of TerraCycle has created a sharps container and shipping carton system available in a variety of sizes. The puncture-resistant sharps containers are approved for use by both UPS and the U.S. Postal Service when shipped within the corresponding carton. Sizes range from a 1.4 quart container for home use to a commercial 28 gallon system. Like its Zero Waste Box programs, the medwaste boxes are postage-prepaid – the customer simply fills the sharps container, boxes it and calls UPS or USPS for a pickup.

According to the World Health Organization, as much as 90 percent of all medical waste is incinerated, even though only 15 percent of it is actually considered biologically hazardous. Originally, it was thought that destroying medical waste through incineration destroyed the known pathogens, but more recent science suggests the process exposes the environment to



The cost-effective solution comes in various sizes of Sharps collection containers which are returned in a prepaid shipping box.

potential contaminants in the form of microscopic particulate emitted in the process exhaust. Furthermore, the resulting ash and byproducts are not easily recouped for recycling or reuse and are often landfilled.

To protect the population and environment, the EPA has begun to promote the use of "Alternative Treatment and Disposal Technologies for Medical Waste." By utilizing commercial steam disinfection (autoclave) of medical waste and then processing the sharps to separate metals, plastics and glass, TerraCycle is able to reclaim valuable materials and divert waste from the landfill. The system provides better, more measurable elimination of biohazards and lessens the linear use of resources.

■ For additional WASTE news, see Page B1

ELECTRONICS

Battery recycling market estimated to reach more than \$25 billion by 2026

The global battery recycling market was valued at around \$10 billion in 2017 and is anticipated to expand at a CAGR of nearly 11 percent from 2018 to 2026, according to a new report by Transparency Market Research titled: Battery Recycling Market – Global Industry Analysis, Size, Share, Growth, Trends, and Forecast, 2018-2026.

Battery recycling prevents used batteries from ending up in municipal wastes and landfills. It enables the reuse of battery materials. Almost every type of battery such as household batteries, laptop batteries, mobile phone batteries, power tool batteries, and car batteries can be recycled.

Batteries are manufactured from hazardous and heavy metals such as lead, mercury, nickel, zinc and cadmium. These metals may leach into the soil if not disposed properly, thus contaminating the soil and polluting underwater and surface water sources.

Battery recycling ensures the continuous flow of hazardous materials and prevents them from entering the environment, thereby protecting the environment from degradation. Battery recycling activities also help prevent potential health hazards.

Increase in environmental concerns about potential threats from unsafe dis-

posal of used batteries is expected to be a key driver of the battery recycling market. Major raw materials used in batteries such as lead, cadmium, nickel, and mercury are highly hazardous and can cause severe damage to the ecosystem. Battery manufacturing companies have recognized these potential hazards. Several government and non-profit organizations have taken steps toward battery recycling by spreading awareness about it or by entering into agreements with consumers for spent batteries. Raw materials used for manufacturing batteries are of high commercial value. The recycling process can yield these raw materials in a cost effective way vis-à-vis their fresh counterparts. Using recycled products for manufacturing can lower manufacturing costs of various products, thereby making the manufacturing process more economical and environment friendly.

Rise in demand for portable consumer electronics is also likely a key factor augmenting the market. Batteries are used in portable electronic products as their power source. These batteries have a lifespan of around two to five years. They need to be replaced with new batteries post their lifespan. The amount of spent batteries is rising with the increase in demand for portable electronic

See BATTERY RECYCLING, Page 10

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ELECTRONICS

Battery recycling ■Continued from Page 9

products. This, in turn, is boosting the demand for battery recycling. However, low end-user awareness about battery recycling is projected to hamper the market. Small-scale end-users of batteries dispose them in garbage dumps instead of giving them to recyclers. Governments and various organizations across the globe have taken steps to increase awareness about battery recycling among end-users in order to prevent batteries from ending up in landfills or garbage dumps.

The battery recycling market can be segmented based on battery chemistry, spent battery source, and end-use. In terms of battery chemistry, the battery recycling market can be classified into lithium-ion, lead-acid, nickel-cadmium, and others. Lead-acid was the dominant segment, accounting for more than 45 percent share in terms of value in 2017. It is expected to continue its dominance during the forecast period. However, the lithium-ion battery chemistry segment is anticipated to expand at a fast pace during the forecast period. In terms of spent battery source, the battery recycling market can be segmented into automotive, electronic appliances, and others. Automotive was the dominant segment of the market in 2017. However, the electrical appliances segment is estimated to expand at a significant pace during the forecast period.

Based on end-use, the battery recycling market can be divided into extraction of material; repackaging, reuse, & second life; and disposal. The extraction

of material segment dominated the global battery recycling market with more than 45 percent share in 2017. This trend is projected to continue during the forecast period. Furthermore, the segment is likely to expand at a significant pace in the near future, primarily due to the high profitability of recycled products owing to their usage as raw materials in the manufacturing process of various other products. This lowers their cost of production.

In terms of region, the battery recycling market can be split into North America, Latin America, Europe, Asia Pacific, and Middle East and Africa. Europe held the leading share (more than 40 percent) of the global battery recycling market in 2017. This can be ascribed to the implementation of stringent environmental regulations regarding battery recycling across the region. However, the market in Asia Pacific is expected to expand at a significant pace during the forecast period, primarily due to the presence of developing economies such as China and India, wherein the demand for batteries is rising rapidly. This, in turn, is propelling the demand for battery recycling.

Transparency Market Research is a global market intelligence company, providing global business information reports and services. Our data repository is continuously updated and revised by a team of research experts, so that it always reflects the latest trends and information.

CONSTRUCTION & DEMOLITION

Association releases detailed C&D fines reports

The Construction & Demolition Recycling Association (CDRA) has made available to members detailed guidance documents on the small particle sized materials from recycling construction and demolition materials while providing other interested parties executive summaries of the papers on the organization's website.

One of the first steps of processing mixed C&D to recycle is to screen out the small particle size material from the incoming stream to the recycling plant, making the remaining materials more suitable for additional processing steps. These fine materials (referred to as recovered screened material in some locations) consist primarily of soil, but also includes small pieces of wood, concrete, drywall, rock, and other miscellaneous materials.

These documents were created by Timothy Townsend, Ph.D. (The University of Florida) and his team to provide insight into the C&D fine characterization and how to better manage this material. The first document addresses strategies that can be used by recyclers to create better products using their C&D fines and market them for appropriate beneficial reuse. It was based on examinations of C&D fines samples from across the country.

The samples were evaluated for particle size distribution, flammability, volatile solids (VS) content, asbestos content, total heavy metal concentrations, total PAH concentrations, PCB concentrations and total extractable petroleum hydrocarbon concentrations. The concern of trace chemicals in C&D fines has led some state regulatory agencies to require routine testing and compliance with risk-based regulatory thresholds. These thresholds account for background con-

centrations and vary geographically, resulting in states adopting different policies regarding beneficial reuse.

The results of the study support that some problematic trace chemicals are more heavily concentrated in the smaller fraction of C&D fines, suggesting additional processing can aid in reducing the concentrations of these chemicals.

The second of the two C&D fines document provides a strong understanding of the types of asphalt products encountered in C&D, how they are typically managed (including recycling) and identify the environmental issues that affect recyclability and markets.

The objective of this research was to provide CDRA members with information on the PAHs they can expect in their asphalt-containing C&D fines and the bioaccessibility fraction of C&D fines. Typically, risk thresholds are calculated using a 100 percent bioaccessible fraction, meaning if 50 percent was used instead then the risk threshold would be higher for PAHs. The materials could be used in a wider range of beneficial use applications without exceeding risk thresholds calculated based on chemical bioavailability. The results of this study can aid recyclers seeking regulatory approval for C&D fines recycling as well as aid the industry in developing solutions to better produce, market, and distribute this commodity in a safe and economical fashion.

Members can log into the CDRA's members-only page to access the two white papers, which will also be updated in the coming months as Dr. Townsend's team completes further research.

The executive summaries are available to the public on CDRA's website.

My two daughters were discussing the less than desirable physical attributes they had inherited from their father.

The older one said, "I hate my freckles


from Dad."

Her unsympathetic younger sister replied, "At least you only got his freckles. I got his eyebrow!"

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METALS

2018's final list of critical minerals released

The Department of the Interior recently published a list of 35 mineral commodities considered critical to the economic and national security of the U.S. This list was the initial focus of a multi-agency strategy to implement president Donald J. Trump's Executive Order to break America's dependence on foreign minerals.

At the direction of secretary Zinke, Interior's U.S. Geological Survey published a draft list of 35 critical minerals under Executive Order 13817.

After consideration of the 453 public comments received, the Department of the Interior decided that the methodology used to draft the list remains valid and finalized the original list in the Federal Register.

"The expertise of the USGS is absolutely vital to reducing America's vulnerability to disruptions in our supply of critical minerals," said Dr. Tim Petty, assistant secretary of the Interior for Water and Science.

The list includes aluminum – used in almost all sectors of the economy; the platinum group metals – used for catalytic agents; rare-earth elements – used in batteries and electronics; tin – used as protective coatings and alloys for steel; and titanium – overwhelmingly used as a white pigment or as a metal alloy. A full list follows.

This list of critical minerals, while final, is not intended as a permanent designation of criticality, but will be a

dynamic list updated periodically to represent current data on supply, demand, and concentration of production, as well as current policy priorities.

Under the Executive Order, the Commerce Department is responsible for organizing the interagency responses into a final report. The report will include:

- A strategy to reduce the nation's reliance on critical minerals
- The status of recycling technologies
- Alternatives to critical minerals
- Options for accessing critical minerals through trade with allies and partners
- A plan for improvements to mapping the U.S. and its mineral resources
- Recommendations to streamline lease permitting and review processes
- Ways to increase discovery, production, and domestic refining of critical minerals

The full list of critical minerals includes the following:

- Aluminum (bauxite), used in almost all sectors of the economy
- Antimony, used in batteries and flame retardants
- Arsenic, used in lumber preservatives, pesticides, and semi-conductors
- Barite, used in cement and petroleum industries
- Beryllium, used as an alloying agent in aerospace and defense industries

•Bismuth, used in medical and atomic research

•Cesium, used in research and development

•Chromium, used primarily in stainless steel and other alloys

•Cobalt, used in rechargeable batteries and superalloys

•Fluorspar, used in the manufacture of aluminum, gasoline, and uranium fuel

•Gallium, used for integrated circuits and optical devices like LEDs

•Germanium, used for fiber optics and night vision applications

•Graphite (natural), used for lubricants, batteries, and fuel cells

•Hafnium, used for nuclear control rods, alloys, and high-temperature ceramics

•Helium, used for MRIs, lifting agent and research

•Indium, mostly used in LCD screens

•Lithium, used primarily for batteries

•Magnesium, used in furnace linings for manufacturing steel and ceramics

•Manganese, used in steelmaking

•Niobium, used mostly in steel alloys

•Platinum group metals, used for catalytic agents

•Potash, primarily used as a fertilizer

•Rare earth elements group, primarily used in batteries and electronics

•Rhenium, used for lead-free gasoline and superalloys

•Rubidium, used for research and development in electronics

•Scandium, used for alloys and fuel cells

•Strontium, used for pyrotechnics and ceramic magnets

•Tantalum, used in electronic components, mostly capacitors

•Tellurium, used in steelmaking and solar cells

•Tin, used as protective coatings and alloys for steel

•Titanium, overwhelmingly used as a white pigment or metal alloys

•Tungsten, primarily used to make wear-resistant metals

•Uranium, mostly used for nuclear fuel

•Vanadium, primarily used for titanium alloys

•Zirconium, used in the high-temperature ceramics industries

Under the Executive Order, these commodities qualify as "critical minerals" because each has been identified as a non-fuel mineral or mineral material that is essential to the economic and national security of the U.S., that has a supply chain vulnerable to disruption, and that serves an essential function in the manufacturing of a product, the absence of which would have significant consequences for the economy or national security.

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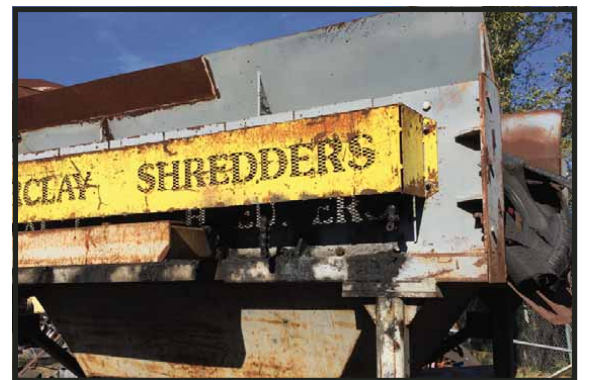
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METALS

River Metals Recycling Paducah achieves SHARP workplace safety recertification

River Metals Recycling (RMR) Paducah received the prestigious SHARP (Safety & Health Achievement Recognition Program) recertification. RMR's exceptional safety record garnered the company its second SHARP award, which was presented by Phillip Bush, Kentucky SHARP administrator and Matt Caudill, industrial hygiene consultant at the Kentucky Labor Cabinet. RMR Paducah achieved the original SHARP certification in October, 2015. Paducah is RMR's fourth recycling facility in Kentucky to receive this award. The Newport, Owensboro, and Somerset locations also earned this distinguished designation.



The Paducah recycling facility teammates were recognized for their commitment to creating and maintaining a safe and healthy workplace. SHARP is the highest honor OSHA awards to small worksites that demonstrate an exemplary commitment to workplace safety and health.

Bob Eviston, RMR president, thanked the Paducah teammates for their daily contribution to the company's success and for operating for seven straight years without any work-related injuries or illnesses. "Congratulations to all

RMR Paducah teammates on receiving SHARP certification," said Eviston. "It is yet another testament to safety being our No. 1 core value. River Metals Recycling teammates' commitment to safety has never been stronger, and this award reflects the entire team's goal of zero accidents. I want to thank the entire RMR team for their continuing safety focus."

River Metals Recycling is the largest scrap recycler in Kentucky and in the greater Cincinnati area, with nine

locations in Illinois, Indiana, Kentucky and Ohio. RMR is headquartered in Crescent Springs, Kentucky, and has 260 teammates. River Metals Recycling's Paducah facility specializes in scrap recycling services for households, tradesmen and businesses, and buys ferrous scrap as well as common household nonferrous scrap metal items like aluminum cans and other aluminum, stainless steel, copper and brass products.

RMR is wholly owned by The David J. Joseph Company.

Nucor acquires minority equity position of Trion

Nucor Corporation has purchased a minority equity position in the parent of Trion Coatings, LLC (Trion Coatings), which is developing an environmentally friendly chrome plating technology.

As part of its investment, Nucor is working with Trion Coatings to commercialize the technology and will be constructing a pilot facility at Nucor Fastener in St. Joe, Indiana. Nucor also holds an exclusive worldwide license agreement for the technology as applied to long steel products.

Trion Coatings was formed for the purpose of developing an environmentally friendly alternative to the traditional chrome plating process. Developing a safer alternative to Cr(VI) presents advantages in the market as the global regulatory environment becomes more stringent.

Trion Coatings utilizes a patent pending process using Cr(III) salts and a proprietary ionic liquid solution. The process allows for greater electroplating speeds, improved wear resistance and overall higher performance than the traditional chrome plating process, while offering an excellent health and safety profile.

Middleburg Capital Development is the majority equity holder of Trion Coatings, with another minority equity stake held by the University of Notre Dame.

A woman walked into the kitchen to find her husband stalking around with a fly swatter. "What are you doing?" she asked.

"Hunting flies," he responded. "Oh! Killing any?" she asked. "Yep, three males, two females," he replied.

Intrigued, she asked, "How can you tell their sex?" "Three were on a beer can, two were on the phone," he replied.



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METALS

Cleanup efforts at former steel company site to proceed

The State Department of Environmental Conservation (DEC), U.S. Environmental Protection Agency (EPA), St. Lawrence County, and the Development Authority of the North Country (DANC) held a comprehensive presentation on cleanup efforts at the former Jones and Laughlin (J&L) Steel Company site in Star Lake, St. Lawrence County. The public meeting was held at Clifton-Fine Central School auditorium in Star Lake. Approximately 60 people took part in a site tour following stakeholder presentations.

Approximately 760 cubic yards of PCB contaminated soil will be excavated and disposed of from 6 separate areas on the site. DEC approved the work plan to conduct the excavation in June. A contractor has been selected and the work has begun. Field work is expected to last up to three weeks.

To date, DEC has recovered 350,000 gallons of fuel oil released to the environment from the site. Removal of the released oil is ongoing. Since 2010, DEC, EPA, St. Lawrence County and DANC have been working together to remove asbestos and PCB contamination and to demolish and remove blighted buildings. Areas of the site found clear of hazardous waste contamination have been transferred to St. Lawrence County for redevelopment. The ongoing cleanup effort is designed to facilitate future, productive use of the site.

Steel imports down 16 percent between May and June 2018

Based on preliminary Census Bureau data, the American Iron and Steel Institute (AISI) reported that the U.S. imported a total of 2,480,000 net tons (NT) of steel in June 2018, including 1,843,000 NT of finished steel (down 15.5 percent and 24.6 percent, respectively, vs. May final data). Year-to-date (YTD) through 6 months of 2018, total and finished steel imports are 17,869,000 and 13,999,000 NT, down 9.3 percent and 7.1 percent, respectively, vs. the same period in 2017.

A key finished steel product with a significant import increase in June compared to May was sheets and strip all other metallic coatings (up 11 percent). Major products with significant YTD increases vs. the same period in 2017 include hot rolled sheets (up 24 percent), plates in coils (up 21 percent), line pipe (up 14 percent) and mechanical tubing (up 11 percent).

In June, the largest volumes of finished steel imports from offshore

U.S. IMPORTS OF FINISHED STEEL MILL PRODUCTS BY COUNTRY OF ORIGIN (Thousands of Net Tons)

	JUNE 2018	MAY 2018	2017 Full Year	2018 Annualized	% Change 2018 Annual vs. 2017
SOUTH KOREA	208	110	3,753	3,480	7.3%
JAPAN	129	120	1,504	1,481	-1.5%
GERMANY	111	140	1,405	1,320	-6.0%
TURKEY	80	92	2,191	1,295	-40.9%
TAIWAN	93	77	1,245	1,120	-10.0%
VIETNAM	120	75	749	1,013	35.3%
BRAZIL	17	75	987	836	-15.3%
CHINA	50	70	813	761	6.4%
All Others	1,034	1,683	16,914	16,691	-1.3%
TOTAL	1,843	2,443	29,561	27,998	-5.3%

were from South Korea (208,000 NT, up 89 percent from May final), Japan (129,000 NT, up 7 percent), Vietnam (120,000 NT, up 61 percent), Germany (111,000 NT, down 21 percent) and Taiwan (93,000 NT, up 20 percent). For the first six months of 2018, the largest off-

shore suppliers were South Korea (1,740,000 NT, down 10 percent vs. the same period in 2017), Japan (741,000 NT, down 7 percent), Germany (660,000 NT, up 10 percent), Turkey (647,000 NT, down 56 percent) and Taiwan (560,000 NT, down 16 percent).

Ben Weitsman of Albany to bring on third shredder

Ben Weitsman of Albany, a division of the East Coast's largest privately held scrap metal processor, has begun work on a multi-million-dollar project to add a 3,000 horsepower Riverside Engineering scrap metal shredder at the facility located at 300 Smith Boulevard in the Port of Albany.

Once complete, all shredding for Albany will occur on-site, which will enable final shred product to be sold and

shipped direct from the Port of Albany via truck, barge, deep sea vessel and rail.

The new shredder, which will add 20 additional positions at the Albany facility, has a 70" mill and is capable of shredding 80 tons of scrap material per hour.

All shredder residue will be sent to the main facility so the nonferrous can be further processed through the eddy currents, micro fines plant, wire chopping plant and newly commissioned dry media plant to separate out the aluminum.




Commodity		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
#1 Bushelings	per gross ton	\$284.00	289.00	294.00	303.00	400.00
#1 Bundles	per gross ton	275.00	262.00	290.00	294.00	395.00
Plate and Structural	per gross ton	285.00	280.00	289.00	301.00	350.00
#1 & 2 Mixed Steel	per gross ton	217.00	264.00	229.00	290.00	321.00
Shredder Bundles (tin)	per gross ton	175.00	179.00	215.00	216.00	225.00
Crushed Auto Bodies	per gross ton	175.00	179.00	215.00	216.00	225.00
Steel Turnings	per gross ton	92.00	98.00	99.00	165.00	240.00
#1 Copper	per pound	2.79	2.64	2.84	2.45	2.50
#2 Copper	per pound	2.60	2.53	2.79	2.12	2.23
Aluminum Cans	per pound	0.72	0.78	0.73	0.75	0.73
Auto Radiators	per pound	1.92	1.89	1.90	1.70	1.81
Aluminum Core Radiators	per pound	0.72	0.85	0.67	0.53	0.55
Heater Cores	per pound	1.25	1.28	1.32	1.26	1.50
Stainless Steel	per pound	0.67	0.65	0.64	0.56	0.62

All prices are expressed in USD. Printed as a reader service only.

DISCLAIMER: American Recycler (AR) collects pricing and other information from experienced buyers, sellers and facilitators of scrap metal transactions throughout the industry. All figures are believed to be reliable and represent approximate pricing based on information obtained by AR (if applicable) prior to publication. Factors such as grades, quality, volumes and other considerations will invariably affect actual transaction prices. Figures shown may not be consistent with pricing for commodities associated with a futures market. While the objective is to provide credible information, there is always a chance for human error or unforeseen circumstances leading to error or omission. As such, AR is not responsible for the accuracy or completeness of the information provided, or for outcomes arising from use of this information. American Recycler disclaims any liability to any person or entity for loss or damage resulting from errors or omissions, including those resulting from negligence of AR, its employees, agents or other representatives.

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METALS

Nucor reports highest quarterly earnings in company's history

Nucor Corporation announced second quarter of 2018 consolidated net earnings of \$683.2 million, or \$2.13 per diluted share, which are the highest second quarter earnings in the company's history. By comparison, Nucor reported consolidated net earnings of \$354.2 million, or \$1.10 per diluted share, for the first quarter of 2018 and \$323.0 million, or \$1.00 per diluted share, for the second quarter of 2017.

In the first half of 2018, Nucor reported consolidated net earnings of \$1.04 billion, or \$3.23 per diluted share, compared with consolidated net earnings of \$679.9 million, or \$2.11 per diluted share, in the first half of last year.

Nucor's consolidated net sales

increased 16 percent to \$6.50 billion in the second quarter of 2018 compared with \$5.57 billion in the first quarter of 2018 and increased 25 percent compared with \$5.17 billion in the second quarter of 2017. Average sales price per ton in the second quarter of 2018 increased 12 percent compared with the first quarter of 2018 and increased 17 percent compared with the second quarter of 2017. Total tons shipped to outside customers were 7,197,000 tons in the second quarter of 2018, a 3 percent increase from the first quarter of 2018 and a 7 percent increase from the second quarter of 2017. Total steel mill shipments in the second quarter of 2018 increased 3 percent from the first quarter of 2018 and

increased 6 percent from the second quarter of 2017. Downstream steel products shipments to outside customers in the second quarter of 2018 increased 11 percent from the first quarter of 2018 and increased 17 percent from the second quarter of 2017.

The average scrap and scrap substitute cost per ton used during the second quarter of 2018 was \$373, an 11 percent increase compared to \$337 in the first quarter of 2018 and an increase of 19 percent compared to \$313 in the second quarter of 2017. The average scrap and scrap substitute cost per ton used in the first half of 2018 was \$355, an increase of 19 percent from \$298 in the first half of 2017.

In May 2018, Nucor announced plans to build a galvanizing line at the company's sheet mill in Arkansas to support Nucor's growth into a wider and more diverse set of strategic end-market applications. The new galvanizing line is a \$240 million investment with an annual capacity of approximately 500,000 tons. It is expected to be operational in the first half of 2021.

In June 2018, Nucor's board of directors declared a cash dividend of \$0.38 per share payable on August 10, 2018 to stockholders of record on June 29, 2018. This dividend is Nucor's 181st consecutive quarterly cash dividend, a record they expect to continue.

U.S. Steel reports on second quarter

United States Steel Corporation reported second quarter 2018 net earnings of \$214 million, or \$1.20 per diluted share. Adjusted net earnings were \$262 million, or \$1.46 per diluted share.

This compares to second quarter 2017 net earnings of \$261 million, or \$1.48 per diluted share.

Adjusted net earnings for second quarter 2017 were \$189 million, or \$1.07 per diluted share.

Novelis, Inc. acquires Aleris Corporation

Novelis Inc., a leader in aluminum rolling and recycling, has signed a definitive agreement to acquire Aleris Corporation, a global supplier of rolled aluminum products, for approximately \$2.6 billion including the assumption of debt.

For Novelis, Aleris, and their customers, the proposed acquisition will deliver a number of significant benefits by:

- Establishing a more diverse product portfolio, including aerospace, beverage can, automotive, building and construction, commercial transportation and specialty products.

- Integrating complementary assets in Asia to include recycling, casting, rolling and finishing capabilities and allowing Novelis to more efficiently serve the growing Asia market.

- Broadening Novelis' automotive business to meet growing demand and diversifying its global footprint and customer base.

- Strengthening ability to compete against steel by gaining a greater platform for production, innovation and service.

Over the past several years, Novelis has successfully brought online \$2 billion in production assets by utilizing its best-in-class manufacturing expertise in rolling and finishing. This proven track record of safely and efficiently ramping up assets, along with collective expertise, will enable Novelis to enhance Aleris' operations, while continuing to deliver solutions that meet customers' needs and drive shareholder value.

The acquisition is subject to customary closing conditions and regulatory approvals and is expected to close in 9-15 months. Until the closing, the companies will continue to operate as separate entities. Following close, the two companies will integrate Aleris into Novelis, which will remain headquartered in Atlanta. The combined company will operate 37 facilities with an employee base of approximately 16,500.

SALVAGING Millions

by Ron Sturgeon
Autosalvageconsultant.com

Tools for success: Master blocking and tackling

The first article in this series listed more than 25 tactics to increase your business success, all of them based on my experience. I started with nothing and didn't attend college, so I know you can achieve maximum success, regardless of your education.

Stop looking for the Holy Grail. It doesn't exist. And stop worrying about what your competitor is doing because it appears they are doing better than you. There are no secrets and no magic formulas. In most cases, you know what to do, but you aren't doing it, so you're looking for something that is new and better. I know, your competitor has a twitter account so you think that you should start to do that and to spend more on Facebook. But you haven't even looked at your pitiful web page in three years since your cousin's nephew put it up for you.

You're looking to expand your product line, but you've spent no time studying what sells and what doesn't in your current product lines. You aren't tracking any metrics, so all your actions are based on your gut instead of any real data or industry benchmarks.

Before you are seduced by what is new, work on your block and tackling.

Work on the stuff you know works. Devote time to the fundamentals that you've been ignoring. You haven't even bothered to measure anything in years. You haven't reviewed your marketing, your production, your buying, or really much of anything. One thing is for sure, what you used to

do isn't good enough today. And you haven't spent any time making sure it's all happening like you expected. You haven't looked for ways to improve any of the basics. When you start looking closely, you will be amazed by what you find.

Want to cut expenses? Get serious about reviewing every financial decision. My boss at Ford, Dixon Thayer, gave us an idea. Look at every expense in the context of, if not done, would we go out of business? If the answer is no, then don't do it. It's easy to add it back later.

Every business I've ever consulted for had too many employees. Most had been doing the same marketing stuff for years, with little or no thought about how their customers or products might have changed. Read my article about client and prospect acquisition cost and use it to think about your marketing.

I am all about innovation, but the incremental effects of innovation are unlikely to make up for a poor execution of the basics. Never try to grow with a bad foundation; it's a failed strategy. If you can't do the blocking and tackling, you will struggle with innovation and growth in double digit percentages is hard to achieve if you aren't on your game. Too often, I see businesses trying to borrow money to cover operating losses while they try to grow, but that's a terrible mistake unless the owners are on the way to solving the fundamental underlying reasons for a lack of profitability.

Remember, only you can make BUSINESS GREAT!

This article was provided by autosalvageconsultant.com, which was formed in 2001 by recyclers for recyclers, to help them improve their businesses.

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AUTOMOTIVE

Technology fuels the future of off-lease sales

Openlane, an upstream vehicle auction platform, is deploying a cache of industry only capabilities to help customers monetize vehicles faster, easier and smarter than ever before. Openlane is a business unit of global vehicle remarketing and technology services provider KAR Auction Services, Inc. and supports private label upstream programs for more than 40 OEM and financial institution brands. The reimagined Openlane platform integrates technology and innovation from across the KAR enterprise, combining data science, machine learning, artificial intelligence and cloud technology to streamline and simplify the upstream experience for sellers and buyers alike.

Under the direction of KAR's chief information officer, Tom Fisher, more than 300 IT professionals located in innovation hubs across North America have been dedicated to the re-architecture of Openlane's technical infrastructure. Over the past 18 months, the team has utilized an agile framework and hybrid cloud approach that integrates advanced cloud technology and specialized in-house development to advance an aggressive agenda of enhancements. The result is a stable, scalable and flexible upstream platform that leverages the

most progressive technology solutions available.

Further fueling Openlane are new data science and artificial intelligence capabilities developed by two of KAR's recent acquisitions, Drivin and TradeRev. Drivin analyzes data from thousands of dealers and millions of vehicles each day to provide customers informed predictive pricing recommendations. Further, Drivin's targeted seller-buyer matching algorithms can connect upstream vehicles with a curated list of buyers where the greatest demand exists. And with TradeRev's "H" artificial intelligence engine, customers can capture consistent and accurate condition report images in just seconds. Together, these capabilities help customers maximize the speed, outcome, and economic impact of their overall upstream business.

As one additional option for customers, Openlane is also offering the power of TradeRev as an additional auction layer in the upstream funnel. Vehicles not otherwise sold upstream can be automatically launched into TradeRev's live, one hour digital auction marketplace, exposing those vehicles to thousands of additional North American dealers.

KAR becomes first remarketer to join digital security initiative

KAR Auction Services, Inc., a global vehicle remarketing and technology solutions provider joins MOBI, the Mobility Open Blockchain Initiative. MOBI is a member driven consortium of global automotive industry leaders exploring blockchain technology for use in the digital mobility ecosystem. KAR is the first auto remarketer to join MOBI and collaborate with international automotive OEMs, new mobility technology companies, government agencies, and leading consulting and financial services firms, to put forward interoperable solutions.

"Working with other leaders in the automotive and technology industries as partners with a vested interest in the success, integrity and security of blockchain enabled solutions, we can build a more transparent and trustworthy ecosystem," said Don Gottwald, chief operating officer and chief strategy officer at KAR. "As a forward thinking company, KAR has assembled a team to consider potential blockchain technology use cases, and active participation in MOBI can help ensure that effort results in a uni-

fied, secure reality for our customers and the industry."

Blockchain technology operates by cryptographically distributing information to a network of independent computers, ensuring transactions are secure and data privacy, ownership rights and integrity are protected. Working in a consortium reduces fraud risks and lowers mobility transaction costs.

"Blockchain has the potential to transform the automotive industry – how dealers and consumers purchase vehicles, insure vehicles and use vehicles on a day-to-day basis," said Chris Ballinger, chairman and chief executive officer at MOBI. "KAR's participation with other automotive industry leaders such as global manufacturers, suppliers, startups, and government agencies means we can all work toward developing a network we trust and adopt."

Through MOBI's open source approach to blockchain software tools and standards, KAR hopes to collaborate on the development of standardized blockchain enabled vehicle data and mobility services applications.

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BUSINESS BRIEFS

CARE names award winners for 2017

■ Market development consultant Mike Tinney has been named CARE's 2017 Person of the Year. Tinney has been instrumental in developing products that utilize post-consumer carpet for the last four years.

New Jersey-based CarpetCycle has been named CARE's 2017 Recycler of the Year. Since 2009, CarpetCycle has diverted over 200 million pounds of carpet from U.S. landfills.

ERI launches new e-waste recycling facility in Indiana

■ ERI, a recycler of electronic waste and a large cybersecurity focused hardware destruction company, has relocated its Indiana operations to a new facility, 95,000 sq.ft. larger than the previous location.

The new Plainfield facility brings the physical size of ERI's Indiana recycling operations to over 315,000 sq.ft. to better accommodate an enormous shredder and steadily increasing demand.

ALT Sales named distributor of Manitex cranes

■ ALT Sales Corp., headquartered in Richfield, Ohio, will become the newest retail distributor in the Manitex Articulating Crane Distribution Network in the U.S. and abroad. Manitex International, Inc. is an international provider of truck and knuckle boom cranes.

ALT Sales Corp. is a member of the ALL family of companies, the largest privately owned heavy lift equipment rental and sales enterprise in North America.

Republic Services appoints James P. Snee to its board

■ Republic Services, Inc. announced that food industry executive James P. Snee has been appointed to its board of directors, bringing its membership to 11. He will serve on the Audit Committee as well as the Sustainability and Corporate Responsibility Committee.

Snee serves as chairman of the board, president and chief executive officer of Hormel Foods Corporation, a Fortune 500 company.

SERVICE SPOTLIGHT



Appraisers

by MARY M. COX

maryc@americanrecycler.com

When considering the sale of a business, it can be helpful to gain perspective on how you measure up in the market. That can, in turn, lead to making an informed decision when proceeding with the ultimate transaction involved, once a buyer is identified.

Sterner Consulting has over 30 years of experience with successful business sales, mergers, and acquisitions. Richard Sterner, president, explained, "Our skills and experience help our clients avoid the potential negative pitfalls of a business transaction. The 'best deal' is not defined by the simple finances of the transaction alone, but a carefully planned business transformation that assures the continued success of the purchased enterprise. We are especially adept in handling business mergers and acquisitions in the environmental industry, including landfill transactions, buying and selling businesses that offer waste transfer stations, hauling, general freight and waste transportation services. We have negotiated, closed, and provided advisory services in transactions totaling \$2.0 billion in first year revenues."

The firm's global client base includes locations across America, the Caribbean, South America and Europe. About half of the firm's work involves enterprise business valuations and banking support packages for companies seeking to prepare for a possible transaction, estate planning or tax purposes, partnership or distribution valuations and many similar tasks. The company has provided expert witness services to litigators including forensic accounting issues, valuation, business practice and other legal matters.

"In today's mergers and acquisitions marketplace, we believe it is critically important to know your relative value, how you fit into the regional and national industry landscape, and key issues for a potential sale or acquisition transaction, generational change, or simply to support banking or funding in the normal course of business. Understanding how the industry values your business and being heard above the

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'noise' is challenging and requires knowledge of the marketplace, what is valuable, and what you have that others want or need. We help companies understand the markets, relative values of their current industry situation, and provide a perspective of their part in the marketplace," Sterner said.

VZN Group is a certified public accounting firm that specializes in providing business valuation services. The need for this service may be due to sales, purchases, mergers, estate planning, buy/sell agreements, gift taxes, charitable contributions, marital dissolutions, etc. VZN clients are varied and include businesses such as manufacturers, distributors, recycling facilities, service providers and other professionals.

John P. Monaghan, CPA, CVA, stated, "With many service oriented businesses, one of the largest assets is often goodwill. Our goal is to put a value on

the intangible assets of a business, including goodwill. This is done through financial analysis, industry benchmarking, and analysis of economic conditions. Selling to a strategic buyer can provide significant economies of scale, leading to premiums paid for the target acquisition. This is especially true in a seller's market."

Monaghan added, "We have seen a trend with aging business owners, pondering retirement with a desire to develop a succession plan. With many small businesses, the sale of the business is their retirement plan. There are many options to consider with succession plans: Is there a family member that will take over the business? Is there a key employee that would like to buy the business? Is there a competitor interested in purchasing the business? These are just a few of the areas in which we are helpful in identifying answers."

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BUSINESS BRIEFS

Waste Harmonics names Ryan Shannon CFO

Waste Harmonics, a Rochester based waste management company providing service brokering in the waste industry announced that Ryan Shannon has joined its leadership team as chief financial officer. With almost 20 years' experience, Shannon brings extensive experience to his role, having held senior level positions with Cooper Vision and Constellation Brands.

As chief financial officer, Shannon will bring his progressive finance and accounting experience to the Waste Harmonics team. Having served in a leadership capacity with multiple large public companies, Shannon will help drive the financial strategy within the company. His main roles and responsibilities will focus on managing the company's finances, including financial planning, management of financial risks, record-keeping and financial reporting.

Shannon holds a Bachelor of Science in accounting and economics from Syracuse University and an MBA with a concentration in finance and accounting from the University of Rochester Simon Business School. In addition to serving as regional controller at CooperVision and finance director at Constellation Brands, he also previously served as an auditor at PricewaterhouseCoopers, and he is a certified public accountant in New York.

ADESA names managers at San Diego and San Jose

ADESA, a business unit of global vehicle remarketing and technology solutions provider, KAR Auction Services, Inc., named Bobby Sylvester as general manager of ADESA San Diego and Henry Cadle has been named auction manager of ADESA San Jose.

Sylvester moved to ADESA San Diego from ADESA San Jose, where he has served as general manager since November 2017. Previously, he served as fleet/lease manager at ADESA Portland.

Sylvester's auction industry career began in 2000 with management positions in detail and body shops for Brasher's, before transitioning to roles in fleet/lease operations and management positions in national sales.

Cadle brings two decades of automotive remarketing industry experience to his new role managing day-to-day operations at ADESA San Jose. He has previously managed auctions in Florida and California and has an extensive background in sales at all levels of the industry. Most recently, he served as UVA sales manager. Cadle began his career in the industry as a branch manager for AFC in Bradenton, Florida, in 1998.

Terex shares second quarter 2018 results

Terex Corporation reported strong second quarter 2018 sales of \$1.4 billion, up 19 percent versus Q2 of 2017, with increased sales and backlog in all three business segments. The results were driven by continued implementation of the company's Execute to Win business strategy and its focus on meeting the growing needs of customers during a period of broad-based growth.

The materials processing business segment was a strong contributor to the overall company results with sales of \$319 million that were 14 percent higher than last year. The growth was driven by consistent execution and increasing global demand for materials processing products driven by broad based economic growth and construction activity. Backlog for the segment at the end of Q2 was \$393 million, up 75 percent versus last year.

ASV Holdings adds Oregon dealer to network

ASV Holdings Inc., a manufacturer of all purpose and all season compact track loaders and skid steers, has added Linn Benton Tractor to its dealer network.

The Tangent, Oregon based dealer will offer all ASV Posi-Track® compact track loaders, featuring best-in-class rated operating capacity, cooling systems and hydraulic efficiency. The company will also carry ASV's full line of skid-steer loaders.

Linn Benton Tractor has been in business for almost 30 years and provides customers with implements and equipment, including compact utility and farm tractors, landscape rakes, chippers, compact track loaders, skid steers, riding lawn mowers and more.

IAA adds North Tampa Branch

Insurance Auto Auctions, Inc. (IAA), a business unit of global vehicle remarketing and technology solutions provider KAR Auction Services, has completed construction of a new facility in Hudson, Florida – approximately 45 miles north of Tampa. The newly constructed facility expands IAA's footprint in the Florida market and enhances its catastrophic event response services capabilities. The branch is the 11th IAA facility in the state of Florida.

The new facility also incorporates the latest security camera technology for maximum protection of customer assets. The newly opened IAA North Tampa branch will begin hosting auctions in early September. Auctions will be on Thursdays, with preview days held every Wednesday.

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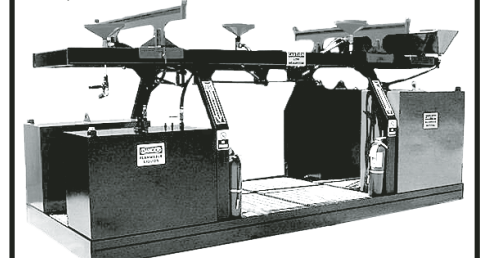
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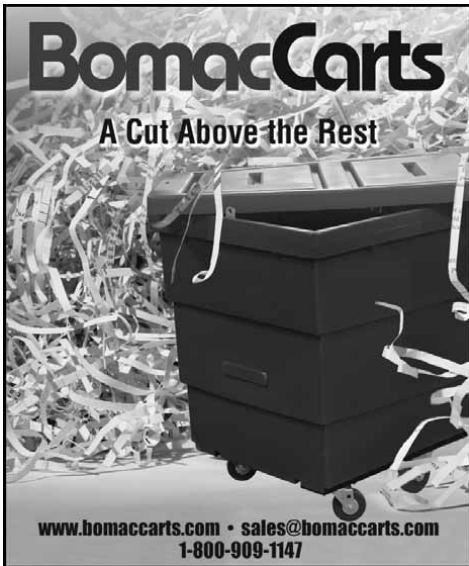
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BROKK LAUNCHES NEXT-GENERATION MACHINES

Brokk, a manufacturer of remote-controlled demolition machines, launched four new models.

The new models include: the Brokk 170, Brokk 200, Brokk 300 and the green diesel Brokk 520D machines. Brokk also introduced new attachments, including BHB hydraulic breakers and three Darda concrete crushers.

Each of the four models includes Brokk's signature technology, SmartConcept™, which offers the power management features of SmartPower, the added reliability and user-friendliness of SmartDesign and the enhanced ergonomics and productivity of SmartRemote™.

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L-COM RELEASES NEW CAT6 RECEPTACLES, PLUGS & JAM NUTS

L-com Global Connectivity, a manufacturer of connectivity products, has introduced a series of electroless nickel finish receptacles, plugs, flange mounts and jam nuts to address harsh environment Ethernet connectivity applications.

The electroless nickel finish offers protection from excessive corrosion which can cause network downtime, intermittent connectivity and overall network performance loss. L-com's new IP68-rated interconnects are Category 6-rated and support network speeds of up to 1 Gigabit per second. This new line includes IP68-rated receptacles, plugs, jam-nuts and flange mounts that are all RoHS compliant, shielded and grounded.

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NEW 855 E EXPANDS SENNEBOGEN PRODUCT LINE

Sennebogen introduced the new 855 E model to its line of material handlers.

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Steinert US introduces the UniSort Film sensor sorter, with the ability to efficiently and accurately sort paper, plastic film and bags.

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BUSINESS BRIEFS

Mack Manufacturing expands facility

■ Mack Manufacturing, an American leader in heavy-duty hydraulic grapples, grabs and clam shell buckets, recently completed construction of a 10,800 sq.ft. expansion that has allowed new efficiencies throughout its production process.

The new facilities are housed in a standalone building adjacent to the main plant. Mack acquired additional property for its 11 acre site to accommodate the added space. Four years in planning and construction, the structure now houses all of Mack's assembly and finishing operations, up to final shipping.

According to Matt Davidson, vice president of sales and marketing, the expansion is a major step forward for the company's production line. It houses a wide range of processes – assembling fabricated components, sandblasting, paint, crating and shipping. All those activities previously shared a 100' x 45' area in the main plant. Now, with almost three times as much space to work with, each operation has the dedicated space it requires, laid out specifically to allow for significant improvements to the workflow.

The improvements also include upgraded technologies such as a closed-loop recovery and purification system for its high pressure washing area, and a fully sealed steel-grit sandblasting stage that reduces the cost of consumable material and enhances its environmental controls.

KAR names new leader for Preferred Warranties

■ KAR Auction Services, Inc., a global vehicle remarketing and technology solutions provider has named Edmund Field president of the company's Preferred Warranties, Inc. (PWI) business unit. PWI serves independent used vehicle dealers and small franchise retail automotive and power sports dealers – offering extended service contract protection plans for pre-owned vehicles.

Field will be responsible for leading PWI's operations and digital and mobile product development and advancing the company's market growth strategies. He will be based at KAR's global headquarters in Carmel, Indiana.

With more than 20 years of automotive industry experience, Field joined KAR earlier this year as the director of new product development. Before coming to KAR, Field was at Volkswagen Group and VW Credit, Inc. He supported the areas of insurance, sales and business development, new product development, contact center operations, fleet management and manufacturing.

During his time at VW Credit, Field was responsible for the development and launch of Volkswagen Financial Protection Services as a start-up insurance entity selling and administering a full suite of insurance protection products to Audi, VW and Ducati dealers in the U.S. market. Field also held several management roles at VCI's customer service center in Libertyville, Illinois.

Winkle appoints Moretti as regional sales manager

■ Joseph Schatz, president of Ohio-based Winkle Industries, recently announced that Chris Moretti has been named as regional sales manager covering the southeast.

Moretti succeeds Paul Bean as Winkle's regional sales manager in the region, who retired recently with over 20 years of service to Winkle customers.

In recent months, Moretti has been traveling with Bean to meet Winkle customers and gather knowledge and understanding of their material handling needs and challenges. Schatz reports that his company has known Moretti for some time and welcomed the opportunity to bring him on-board.

A Penn State business graduate, Moretti focuses on the process needs of customer applications to provide an effective liaison with Winkle engineering and services. He also takes on responsibility for recruiting additional sales representatives and dealers to extend Winkle's service presence at a local level throughout the region.

Liebherr USA celebrates new headquarters

■ Members of the Liebherr family, executive management and Newport News city officials gathered in July for a groundbreaking ceremony at Copeland Industrial Park to celebrate the construction of the new Liebherr USA, Co. headquarters.

The commencement of this \$45 million expansion project marks the beginning of an exciting new chapter for Liebherr in the U.S. The company that has been manufacturing and operating in Newport News, Virginia for over 48 years broke ground at the site adjacent to its current location.

The new facility will serve as the new headquarters for Liebherr USA, Co. and will include the construction of three new buildings: a state-of-the-art four story administrative building, a carefully designed warehouse and parts distribution center and a modernized production and workshop facility intended to support the company's cranes, construction and concrete divisions.

Once completed, the new buildings will add over 251,000 sq.ft. to the existing 560,000 sq.ft. Liebherr campus. This investment will greatly impact the company's operations in the U.S. and drive Liebherr's strategy for long-term growth.

Winkle expands capabilities in Ohio

■ Winkle Industries has expanded into a new parts warehouse and service facility to support its nationwide dealers and their customers.

The new 50,000 sq.ft. facility, located adjacent to Winkle's main plant, will increase capacity for aftermarket renewal parts while allowing greater efficiency in operations.

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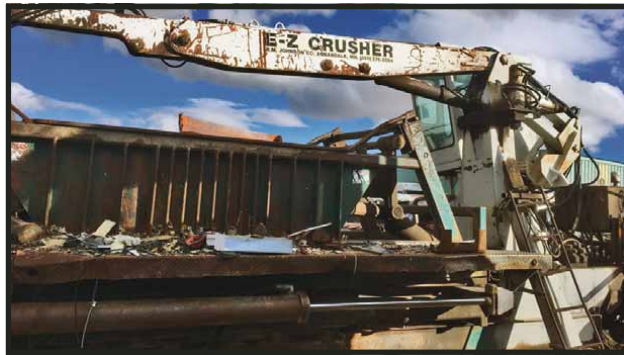
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Technology advances load monitoring

by MAURA KELLER

mkeller@americanrecycler.com

Few words captivate the waste and recycling sector more than the word ‘change.’ Anyone with even a casual understanding of the technology and equipment marketplace within the industry recognizes that change is constantly afoot.

In fact, thanks to current and upcoming technological advancements, today’s recycling and waste industries look nothing like those of even a decade ago. And now more companies, both small and large, have embraced technological innovations and equipment advancements to stay ahead of the game.

According to Lewis Carver, vendor relations manager, waste consulting at ENGIE Insight, technology will continue to alter the way the waste and recycling industry operates.

“Perhaps most notably, one of the most disruptive technologies on traditional waste/trash hauler routed service models will be commercial container monitoring,” Carver said. “We see the effects of it with compactor monitoring now and companies are maximizing their loads and reducing cost.”

As Carver explained, monitoring technology has the potential to reduce

the amount of waste being diverted to landfills – an issue that has affected municipalities for decades. By tracking and categorizing the collected materials, and monitoring how much waste is collected on each route, companies can solve multiple problems.

“First, it allows trucks to cut back on road time by only collecting bins when they are full,” Carver said. “This ‘on call’ model will help companies reduce their road emissions and the amount of waste being diverted to landfills. Additionally, this allows haulers to analyze the fullness of their own trucks, which maximizes the waste load per trip and reduces costs.”

Carver suggested that container monitoring will impact the “routed service model” of traditional waste haulers by allowing the customer to confirm pick-ups, understand fullness on service days and see the contents of the container.

“Until this point, waste haulers controlled the entire pick up process by dictating when, where and if the bin would be emptied. But with monitoring systems, customers can take control,” Carver said.

For example, in the traditional model, customers pay for a scheduled service, meaning the hauler will arrive



Waste hauler monitoring systems allow for crews to inventory their loads while on route.

PHOTO BY ARTISTIC OPERATIONS | PIXABAY

a certain number of times per week, no matter what and does not allow customers to adjust their service depending on the volumes they produce.

“However, front load monitoring will change all of this by allowing them to pay for the service they need instead of a pre-packaged service,” Carver said. “This relatively new technology lets the customer confirm the type of service they’re receiving and if their current rates are fair – shifting the leverage towards customers and forcing haulers to re-evaluate their business models.”

And in terms of sustainability, this technology allows haulers to analyze bin fullness, track when the container/bin was “tilted or dumped,” and in some cases, track the type of material being placed in containers to help customers be more effective recyclers.

C&D Stream

Bill Bradley is the chief executive officer and founder of 5280 Waste Solutions, a roll-off waste management company as well as Starlight LLC, a software company that helps manage the roll-off process in real time. Starlight’s end-to-end software was built to maximize productivity and profitability of roll-off haulers but was recently enhanced to serve the needs of C&D recycling centers, or any weight scale based C&D disposal or transfer operation.

According to Bradley, the EPA statistics from January 2018, indicate that by weight, the volume of construction and demolition debris constitutes 51 percent of the total municipal waste stream (MSW).

“MSW, of course, receives virtually all of the attention when it comes to recycling because it’s embedded in the daily lives and routines of consumers and tax payers,” Bradley said. “Likewise, municipalities have a good understanding of the profile and characterization of the MSW waste stream, and systems and processes are well evolved to target, source, separate and reprocess the elements of the MSW stream.”

However, as Bradley explained, what is less well understood are the elements of the much larger C&D components.

In addition he says, “Municipalities, companies, haulers and disposal sites are just now realizing that they can’t make meaningful progress in the effort to divert material from disposal toward recycling unless they understand and address the single largest component of waste – construction and demolition debris. There have been isolated pioneering efforts, but many municipalities are just starting to try to understand C&D debris with questions

See **LOAD MONITORING**, Page B7



New technology offers solutions for construction and demolition waste disposal, which can be challenging when various types of materials are all thrown in the same container.

PHOTO BY JAY CLARK | UNSPLASH



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Bridgeton Landfill lawsuit settlement finally reached

Missouri Attorney General Josh Hawley announced that after five years of litigation, a settlement has been reached between the State of Missouri and Bridgeton Landfill, LLC, Allied Services, LLC and Republic Services, Inc.

In 2013, the State filed a lawsuit alleging violations of Missouri's environmental regulations and asserting common-law claims related to a subsurface fire at the Bridgeton Landfill.

The settlement imposes extensive maintenance, monitoring and mitigation requirements on Bridgeton; commits Bridgeton's parent company, Republic, to guarantee and financially assure those activities; and provides restitution to the community affected by the landfill fire.

The settlement was reached after years of advocacy and litigation by the Attorney General's Office, along with the Department of Natural Resources, on behalf of the community.

Since the lawsuit was filed, Republic has spent over \$200 million to

address the effects of the subsurface fire by developing a state-of-the-art wastewater treatment plant, upgrading infrastructure to manage gas extraction, installing a synthetic cover to contain odors, performing extensive monitoring, and performing several other mitigation activities.

Under the settlement, the maintenance and mitigation of the landfill will continue under the supervision of the State. Furthermore, Republic Services, Inc., has guaranteed performance of those activities, and has secured a \$26 million bond and agreed to provide \$61 million of additional funding to assure future performance of those obligations should any default occur.

In addition, Bridgeton will establish a \$12.5 million fund, to be administered by the St. Louis Community Foundation that will provide restitution to the members of the community in and around Bridgeton. Bridgeton also will pay \$3.5 million in penalties and damages to the State.

Meridian Waste expanding in Virginia

Meridian Waste, an integrated, non-hazardous solid waste services company, has acquired Bob's Refuse Service, New River Container and Resource Management Group companies located in the greater Blacksburg/Christiansburg, Virginia marketplace. The acquisitions will be operating under the Meridian Waste/CFS Group Blue Ridge company banner.

Meridian Waste will now provide environmental waste services to approximately 1,650 new commercial customers and 550 new residential customers from the company's existing Christiansburg, Virginia location. In addition, the asset purchases include a fully permitted and operating construction and demolition debris material recycling facility located in Radford, Virginia.

SWANA launches Hauler Safety Toolkit nationwide

The Solid Waste Association of North America (SWANA) has launched a Hauler Safety Toolkit to be handed out to solid waste haulers throughout North America, in order to ensure that safety resources are available to companies and municipalities of all sizes.

The Toolkit brings together valuable safety resources into a simple, shareable form that SWANA Chapters intend to use at Hauler Safety Outreach events. These one day events are designed to get safety messaging directly into the hands of drivers when they bring material to landfills, transfer stations, waste-to-energy facilities, materials recovery facilities, and other sites.

The Toolkit was developed by the SWANA chapter safety ambassadors and safety leaders within each of the SWANA Chapters.

"The SWANA Hauler Safety Toolkit is a great resource to touch drivers, helpers, supervisors and managers in the waste industry, and sends a consistent safety message to all industry professionals," said James Profit, assistant manager of operations at Montgomery County Solid Waste Services and SWANA's safety ambassador for Ohio. "I plan to work with landfills, transfer stations, and MRFs in Ohio to

provide a consistent message about safety along with some specific rules and regulations for each disposal site."

SWANA safety ambassadors will take the lead in distributing the Toolkit during Hauler Safety Outreach days throughout the U.S. and Canada during the rest of 2018.

In addition to providing safety resources, drivers and haulers will also be asked to take the SWANA Safety Pledge. This pledge commits them, in part, "to help everyone get home safe every single day" and to "consider worker, customer, and public safety in every decision."

SWANA has discussed this outreach initiative with safety leaders at the largest solid waste companies in North America and has received overwhelming support for this effort.

By designing the Toolkit and outreach events aimed directly at haulers of all sizes, SWANA hopes to reduce the rate of injuries and fatalities for collection workers, who currently have the fifth highest occupational fatality rate in the U.S.

A direct link to the Hauler Safety Toolkit and SWANA Safety Pledge can be found in this article on www.AmericanRecycler.com

Waste Management reports increased net income

Waste Management, Inc. announced financial results for its quarter ended June 30, 2018.

Revenues for the second quarter of 2018 were \$3.74 billion, compared with \$3.68 billion for the same 2017 period.

Net income for the quarter was \$499 million, or \$1.15 per diluted share, compared with \$362 million, or \$0.81 per diluted share, for the second quarter of 2017.

On an as-adjusted basis, excluding certain items, net income was \$438 million, or \$1.01 per diluted share, in the second quarter of 2018.

The company's as-adjusted second quarter 2018 results exclude a \$0.07 per diluted share tax benefit related to income tax audit settlements and a net \$0.07 per diluted share benefit primarily related to the gain on divestiture of an ancillary business.

In the second quarter, revenue growth was driven by strong yield and volume growth in the company's collection and disposal business, which contributed \$135 million of incremental revenue.

This was partially offset by a decline in revenue from the company's recycling line of business, which fell by

\$85 million on a year-over-year basis in the second quarter of 2018.

Core price, which consists of price increases net of rollbacks and fees, excluding the company's fuel surcharge, was 5.3 percent, compared to 4.7 percent in the second quarter of 2017.

Internal revenue growth from yield for collection and disposal operations was 2.3 percent for the second quarter of 2018 versus 1.9 percent in the second quarter of 2017.

Traditional solid waste internal revenue growth from volume was 2.3 percent in the second quarter of 2018. Total company internal revenue growth from volume, which includes our recycling and other ancillary businesses, was 1.8 percent in the second quarter.

Average recycling commodity prices at the company's facilities were approximately 43 percent lower in the second quarter of 2018 compared to the prior year period.

Results for the company's recycling line of business declined by \$0.07 per diluted share when compared to the second quarter of 2017. The full year impact from recycling is now expected to be a negative \$0.17 to \$0.20 per diluted share.

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SWANA updates on impact of China's import restrictions

The Solid Waste Association of North America's (SWANA) has issued an update for state and provincial environmental agencies on China's waste import restrictions and their impact on recycling programs in North America.

This update, the third in a series of agencies on the issue, provides an overview of the effect that the restrictions are having on the export of recyclables from the U.S. and Canada, including the increased movement of material to Southeast Asian countries and additional potential restrictions.

"The deepening impact of China's waste import restrictions is being felt in a growing number of communities,"

said David Biderman, SWANA's executive director and chief executive officer.

"In addition to the ban on certain materials and the new stringent contamination standard, China temporarily halted pre-shipment inspections in May. Combined with new limitations by other Asian countries receiving more recyclables from the U.S., the result has been lower prices and continued uncertainty about the long-term sustainability of recycling programs. SWANA feels it is important to continue to update key stakeholders on this evolving situation."

SWANA has taken numerous steps to respond to the disruption caused by

China's waste import restrictions. These include the establishment of a Recycling Task Force consisting of industry and municipal leaders, advocacy on Capitol Hill for recycling-related funding in the infrastructure bill, consulting with associations and other organizations that support recycling, and developing a China waste import restrictions webpage of resources.

"For the past several decades, China has served as the end-market for roughly a third of the world's recyclables, and its new policy banning mixed plastics and mixed paper has created a global over-supply of paper

on the world market," said Susan Robinson, director of federal affairs for Waste Management and member of SWANA's Recycling Task Force.

"This supply and demand imbalance, combined with China's new 0.5 percent contamination standard, has increased the quality requirements for recyclables, whether they are moving to domestic markets or to other alternative markets. Until new markets develop, stakeholders will need to work together to develop solutions that will support our local recycling programs."

SWANA will continue to monitor the situation and provide updates to the suggestions as necessary.

NY DEC offers strategies for municipal organic waste

New York State Department of Environmental Conservation (DEC) commissioner Basil Seggos disclosed a new comprehensive strategy to address the potential environmental impact of mulching and composting operations at waste management facilities on Long Island.

The strategy is designed to address potential impact including fires, dust, odor and groundwater impacts.

Governor Andrew M. Cuomo directed DEC to revise the state's solid waste regulations governing mulching and composting operations at waste management facilities to incorporate additional restrictions and ensure facility operations are protective of public health and the environment in 2017.

To develop the comprehensive new strategy, DEC assessed 80 sites on

Long Island to evaluate operations and environmental conditions at each site.

Many of these sites were exempt from DEC regulation prior to November 2017, and were not subject to DEC oversight. This assessment will be used to determine necessary site-specific controls.

In addition, DEC is implementing recently adopted regulations governing composting and mulching operations on Long Island.

These are the first comprehensive regulations governing mulching operations in New York, and include pile size restrictions, temperature monitoring, buffer zones to neighbors, water bodies, etc., and the requirement for groundwater protection plans.

In June 2018, the DEC met with private and municipal mulch producers

and engineering consultants to discuss the criteria required by the State's new regulations.

DEC also completed a \$400,000, two year field study of the potential groundwater impacts from various mulch pile configurations to help develop revisions to regulations.

In light of the information found through DEC's research and evaluation of mulch and compost sites in 2018, and requirements of new legislation adopted in 2017, Governor Cuomo directed DEC to revise the state's Part 361 regulations in 2019 to strengthen the groundwater protection requirements for waste management sites.

Strengthened requirements include groundwater monitoring requirements, methods to minimize liquid that has come into contact with the organic

material such as pads on the site or pile covers, and prohibitions on operations in mines.

Assemblyman Steve Englebright, chair of the Assembly Environmental Conservation Committee, said, "Composting and mulching on Long Island, when done at large scale facilities, needs to be carefully managed to protect drinking water. Site assessments have shown that very specific strategies are needed in order to prevent any negative environmental impacts to local communities. I look forward to working with the Department to ensure that these comprehensive strategies take into account the full picture of any potential impact and that the law that I sponsored last year is implemented to the fullest extent."

NWRA and SWANA offer updated municipal collection guides

The National Waste and Recycling Association (NWRA) and the Solid Waste Association of North America (SWANA) reissued their Joint Advisory on Designing Contracts for Processing of Municipal Recyclables, which is now updated to include a preface about how China's waste import restrictions have affected the market for recyclable materials.

"In 2015, NWRA and SWANA first issued this document with the intent of providing professionals in our industry a tool to achieve best practices in contracting for recycling processing. As our industry responds to China's efforts to curb imports of recyclables, NWRA and SWANA believe an updated document reflecting the current market conditions will be useful to our members," said NWRA president and chief executive officer Darrell Smith.

The reissued document reflects the need for North American recycling programs and providers to re-examine their current practices and investigate new processing systems, implement contamination reduction methods, and revise program guidelines for acceptable materials.

"We think it is important that recyclers address overall program sustainability and not just blame China's import restrictions for our current challenges," said Sara Bixby, SWANA deputy executive director.

Bixby continued, "Anything that we can do in the U.S. and Canada to reduce contamination and improve our partnerships will also help develop and support recycling markets in North America. That makes all of our programs stronger."

To guide solid waste and recycling professionals on protocols and standards regarding contracting for the processing of municipal recyclables, the updated report is available for public download to ensure information on best practices is available throughout the industry.

SWANA and NWRA have partnered on many initiatives to respond to the current market disruption in the wake of China's waste import restrictions, including advocacy for recycling funding in Congress' Infrastructure Bill and meetings with key organizations and non-profits to identify industry opportunities.



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Containers

by **MARY M. COX**

maryc@americanrecycler.com

The most recent data from the Environmental Protection Agency (EPA) about U.S. waste generation is from 2006. At that time, the amount of trash created by Americans was 251 million tons. That is about 4.6 pounds per person, per day. An Indiana University study from 2015 noted that although 75 percent of the American waste stream is recyclable, only about 30 percent of it is recycled.

The EPA noted the same year, the following Container Recycling Institute estimate: 36 billion aluminum cans landfilled the year prior had a scrap value that exceeded \$600 million. For the obvious benefit to our environment and to reduce the cost of landfilling, waste processing goals become more ambitious each year.

Part of that effort clearly involves the methods used to best contain the various materials processed from waste and recycling streams. There is no shortage of container types to choose from, in the marketplace.

"Managing your material handling process with carts from Bomac Carts can be beneficial toward process efficiencies, as many customers have found," Cindy Lapidakis, vice president, sales and marketing, commented. Bomac manufactures heavy duty carts used for recycling of waste, paper, electronics and many other materials. All products are made in the U.S. and with a focus on efficiency and choosing the right cart for your process and application; Bomac manufactures all carts to order and offers modifications, custom carts and labeling.

"It is for this reason that Bomac solutions meet the needs of the recycling industries. The quality and dura-

bility of our products is supported by an amazing customer service team. We've manufactured carts for the material handling and waste industries since 2002 and Bomac has grown while expanding into warehousing/distribution, specialty manufacturing and some areas of construction. The Recycle Cart is one of our most popular products, which fits many different uses in different markets. The robust design of the Recycle Cart and the option of standard bases or forklift bases make this product even more popular. Check out our products online and give us a call if you're looking for high quality products from a great company," said Lapidakis.

Custom Container Solutions, LLC (CCS) provides steel containers to the waste, recycling and environmental services industries. "Our containers are used to move residential, commercial and construction waste and industrial metal scrap to landfills and recovery recycling centers throughout the Mid-Atlantic and Mid-West. We produce 2,000 roll off and hook lift containers per year and over 7,500 front and rear load containers," noted Todd A. Vonderheid, managing member.

He also explained, "Our industry faces a pressing issue with the U.S. steel tariff recently imposed. Our steel cost has risen 50 percent in the past 6 months and continues to increase. We've worked hard to reduce other costs and communicate with customers, about this new issue. Like most steel fabricating companies in the



Bomac Carts

U.S., however, we're unable to pass along all the cost increases to our customers. Since many of our customers are either metal scrap companies or those who depend on users of steel, the impact will be felt across different sectors. Unfortunately, there is not a direct relationship between the cost of domestic steel and domestic scrap prices. So, our customers do not see an increase in their revenue to offset their increased cost of equipment. As such, we always work with customers to improve our product offerings and increase production efficiency to help keep prices competitive and product available in a timely manner."

Since the purchase of Stoltzfus Manufacturing in 2011, CCS has tripled production capacity and annual sales. In June of 2017, CCS purchased Valley Can, Inc and today, CCS employs almost 60 employees among both facilities.

Schaefer manufactures refuse and recycling rollout carts for municipalities and haulers in the United States and across the world. Brett Belda, director of National Sales stated, "For over 80 years, Schaefer has been synonymous with quality and on-time delivery. Clients take advantage of the quality in our brand by utilizing products and services offered, which include RFID-enabled carts, assembly and distribution services, route audits, inventory management, service verification and real-time reporting. We have an outstanding reputation within the waste industry as the quality leader of injection-molded carts and guarantee on-time delivery. The Schaefer cart

See CONTAINERS, Page B6



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Waste Pro drivers earn \$70,000 in bonuses for safe driving

Waste Pro drivers Eddie Washington, Kenneth Eckford, Johnathan Moody, LW Jefferson, Jerry Harris, Willie Beard, and Lennard Brown were each presented with Waste Pro's \$10,000 safety bonus.

Washington, Moody, Jefferson and Brown also received the bonus in 2015, and were awarded plaques denoting six years of "exceptional service and an excellent safety record" at the banquet.

The \$10,000 Safety Award Bonus is awarded to drivers who have a spotless work record for three years, excellent customer service, no accidents, injuries, or property damage, a positive attitude and attendance record and a well-kept truck.

Waste Pro is the only company in the U.S. that offers this bonus to drivers.

"I could not be prouder of the accomplishments of this great group of employees and the management team. It takes a team effort to maintain the safety culture that is happening in Columbus," said Alan Reed, regional driver trainer in Columbus. "It takes a lot of teamwork with the employees encouraging each other, every employee having pride in what they do, respecting our customers and fellow employees, but mainly holding themselves accountable for shortfalls and each employee celebrating each other's victories."

Environmentally focused oilfield waste facility opens in South Texas

Milestone Environmental Services, a leader in oil and gas waste management, has opened its state-of-the-art facility to serve exploration and production customers in the northern Delaware Basin.

The location in northern Reeves County is five miles east of Orla in the heart of the northern Delaware Basin drilling activity in Texas and southern New Mexico.

At this new site, Milestone will primarily accept drilling waste streams, including water-based mud and oil-based mud, along with some completion and production waste such as tank bottoms and water waste streams.

The facility started receiving shipments from customers in July and is operating 24/7.

The Orla facility is designed to minimize the impact on the environment and the community. The facility will minimize waste by reusing salt water, recovering oil and capturing solids.

By locating facilities near drilling activity, Milestone reduces truck trip times and traffic along the highways which benefits the community and saves customers time and money. The facility is situated on acreage to decrease noise, lights and dust for neighbors.

Seattle's first electric refuse trucks to be delivered by BYD

BYD (Build Your Dreams) announced that the first electric refuse trucks to operate in the city of Seattle – as well as the entire Pacific Northwest region – are ordered and will soon be helping to deliver on a cleaner environment.

Two of BYD's 8R Class 8 battery-electric refuse trucks, fitted with New Way Viper rear loader refuse bodies, will be delivered to Recology in Seattle, Washington for use in residential solid waste pick up.

BYD's zero emission battery-electric Class 8 truck chassis boasts optimal efficiency with regenerative braking and best-in-class power and torque.

In addition to the environmental and financial benefits of zero-emissions

and reduced operating costs, BYD's electric trucks are quiet and clean, which has an immediate impact on quality of life for the communities they serve.

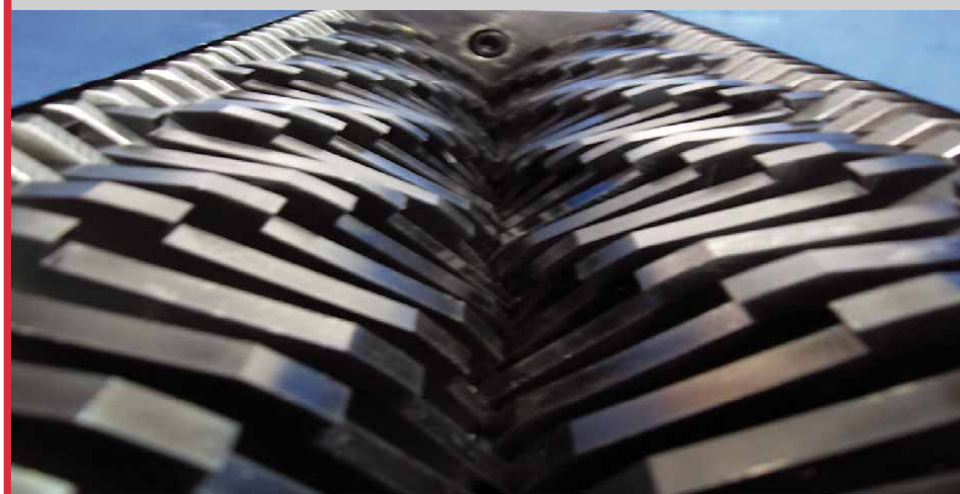
Recology's electric trucks will serve customers in the City of Seattle and mark an important step in realizing climate impacts that address the region's growing need to prioritize resiliency. Especially for collection services that require heavy-duty trucks to frequent roads in these communities on a daily basis, electric trucks present a sustainable solution that both Recology and its customers can feel good about.

The electric refuse trucks are scheduled to be delivered in the first half of 2019.

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INDUSTRY PROFILE

A Closer Look

by Donna Currie

Tire Disposal and Recycling, LLC

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Mark Hope got his feet wet in environmental issues when working for a government agency that dealt with those issues. While he enjoyed the work, it wasn't exactly what he wanted. "I was looking for a way to control my own destiny," he said, so he joined a startup company that handled recycled tires. While he wasn't completely in control of his destiny, he was second in command, and remained there for 16 years.

When an opportunity arose to purchase part of the company, he took that leap in 1998 and became the owner of the division that serviced Washington, Oregon, California, and Idaho. The new company became Waste Recovery West, which handles California while Tire Disposal and Recycling services the other three states.

Today, the company processes about 12 million tires a year, keeping them out of landfills and creating useful products out of most of what comes in. "All we do are tires," Hope said. They have seven major regional operations, servicing a variety of areas from urban to rural.

"Primarily 99 percent is business-to-business," Hope explained. They service retail tire stores, commercial truck centers, big box tire centers and large tire chains. Several of the company's sites are open to the public, but that is a small percentage of the overall business.

The company uses route trucks to pick up tires in large cities like Portland, Boise and similar urban areas, and they spot trailers for tire collection in more rural areas, where the trailers are left onsite until they're ready for pickup. They also do remediation work where tires have accumulated over time and they participate in "amnesty events" where cities "allow the public to get rid of four to five tires for free or at low cost."

Tires are brought to a central processing site where they are shredded, although "really good looking tires" might be set aside for resale. Some of the shredded material is exported to Japan where it is used for energy production, while other material is used domestically in the cement industry for fuel.

Tire-derived aggregate is another market for shredded tires, and the material is also used for sub-ballast in light rail systems, below a layer of rock. The rubber chips absorb vibration and help reduce noise from the trains. Some material is also used for light road fill. Truck tires are sent to other companies that make crumb rubber which can be used to make rubber mats, like those used for horse trailers.

While the company makes every effort to find homes for the shredded tires, there are times when the market is soft and there is no demand for the material. In that case, the material is sent for proper and legitimate disposal.

With his long tenure in the industry, Hope has seen a lot of changes. "When we started, basically in 1982, we were the pioneers," he said. "Energy recovery was our primary focus." He had to explain to potential customers that they could use the material for energy recovery and also stay within EPA compliance. While tires are a good source of energy production, they need to compete with other energy sources, so "when gas is cheap, tires are not as desirable."

While much of the material is used for energy, in California the aggregate material is increasingly popular, and the use of it has become institutionalized. Other states don't have that same push to use recycled rubber for roads. Crumb rubber has even more uses, including for playing fields, colorized mulch, and as bedding material for playgrounds. "A lot of the uses didn't exist before," Hope said.

Rubberized asphalt isn't just a good way to reuse tires, it's actually a superior product that provides better performance and longevity and helps to reduce noise. It also doesn't need to be as thick as traditional asphalt, so, while it can be more expensive, there's a significant cost-benefit over the life cycle of the product.

Over the years, Hope has worn a lot of hats, including transportation, marketing, and government compliance, and that's why he enjoyed the job so much – the "diversity of the scope of the job." Of course, he had his favorite jobs, including working in sales. "You're talking to people, developing relationships," he said. He also enjoyed seeing the markets grow and develop, and seeing recycled tires becoming an accepted product. On the other hand, regulatory issues "can be pretty weighty."

When Hope first started in the industry, he said it was a rather unregulated community, but now "there's a real bar set" for insurance, compliance and other necessary parts of the business. Hope is pleased that the company survived and grew during his tenure, and he's particularly proud of "the people and the team that helped build it."

While he enjoyed the work, he said, "For all the things I liked about it, there are the day-to-day things that wear you out." He considered bringing in someone new to run the company in his place, but decided that it would be better to sell the company. "You need a certain amount of energy to take it to the next level," he said, and he's looking forward to retirement rather than another challenge.

"The new owners have that level of excitement that bodes well for the next generation." Meanwhile, Hope is working towards his retirement and looking forward to some well-deserved rest.

New driver training centers create career opportunities

Waste Pro's regional operations headquarters in Sanford, Florida, has opened its doors to the company's first of two planned Driver Training Centers (DTC).

As the nation faces a shortage of CDL drivers, Waste Pro is committed to turning to its own employees to fill the need. Waste Pro's Co-Heart Program, created in 2015, provides current employees the opportunity to earn their CDL. Since then, more than 100 Waste Pro employees have successfully completed the program.

The new DTCs allow newly hired drivers and current employees who are newly certified to attend a multi-day training class covering topics including

customer service, safety, vehicle specifics, and the "Waste Pro Way." In addition, the curriculum gives participants access to hands-on experience using a new, state-of-the-art driving simulator, and specially-designed training trucks.

After completion, drivers will be paired with a mentor in their home division to continue their educational and professional growth.

The inaugural class consisted of six participants who refer to themselves as "The Pioneers." The second DTC is scheduled to open in Atlanta in September. Each class can accommodate 10 to 20 participants each week.

Containers

Continued from Page B4

is a high quality, well designed, low maintenance cart with the service and support to back it up. We possess an array of products and solutions and have established ourselves as a great partner to our clients across the globe. Today, we're one of the largest, private and family owned companies worldwide, with total employees of over 10,000."

Belda said members of the company take pride in addressing and solving challenges faced by their customers. "Whether it's a new automation program, asset management or service verification, we have solutions to support the needs of our clients. Along with being a full solution provider, we view customers as partners and we approach these relationships accordingly. When a Schaefer staff member makes a commitment, you can be assured we will stand by our word."

Belda also expounded on the emerging RFID technology, as it pertains to carts. "Our Wistar RFID solution has capabilities ranging from deployment tracking to inventory man-



Schaefer Systems International, Inc.

agement to on-board technology for service verification. The Schaefer approach is simple, tell us what you are trying to accomplish and we'll build the solution that best suits your needs."

The Schaefer Group began operations in 1937 in the Sigerland region of central Germany. In 1989, the North American headquarters was established in Charlotte, North Carolina.

AR EQUIPMENT SPOTLIGHT

To be included in the spotlight, you must **manufacture** the equipment featured. We require a company name, contact person, telephone number and, if applicable, a website address.

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American Recycler is not responsible for non-inclusion of manufacturers and their equipment. Manufacturers are to contact American Recycler to ensure their company is listed in the Equipment Spotlight.

NY Mayor signs new waste legislation

On August 16, New York City Mayor Bill de Blasio signed legislation that will reduce the amount of waste that can be taken at transfer stations in four neighborhoods that bear the brunt of the city's waste management infrastructure. Intro 157-C, known as the Waste Equity Bill and sponsored by Council Member Antonio Reynoso, provides relief to communities in the Bronx, Brooklyn and Queens that have disproportionately shared the city's waste management infrastructure. The bill will prohibit the creation of new waste transfer stations in neighborhoods that handle at least 10 percent of the City's waste.

"For far too long, a few communities have been saturated by waste transfer stations and resulting truck traffic. We are creating a more equitable city by shifting the burden away from those communities, and protecting other neighborhoods from facing this inequity in the future," said Mayor Bill de Blasio.

The law reduces the amount of waste that can be processed at waste transfer stations in certain neighborhoods, and will dramatically reduce truck traffic associated with garbage collection in neighborhoods that have historically handled the majority of the city's waste.

Through this plan, neighborhoods including the South Bronx, Northern Brooklyn, and Jamaica will decrease their share of the City's overall waste-collection capacity and will ensure that capacity is more equitably distributed throughout the city.

The bill also restricts the construction of new waste transfer stations or additional permitted capacity in overburdened neighborhoods to ensure a decrease in truck-related traffic, pollution, and subsequent negative health effects on people living in those neighborhoods.

Combined, these initiatives will decrease pollution-related health effects in neighborhoods in the Bronx, Brooklyn, and Queens while forging a more equitable sanitation infrastructure that balances infrastructural burdens across all boroughs.

The law marks the final chapter of the City's Solid Waste Management Plan, which will dramatically reduce truck traffic associated with waste collection and hauling in neighborhoods historically overburdened by waste processing infrastructure, including North Brooklyn, the South Bronx and Southeast Queens.

DSNY estimates that this bill will move between 1,200 and 1,800 tons per day of waste out of these neighbor-

hoods, which means 120 to 180 trucks per day (on average) that will no longer dump waste in these 4 overburdened communities, and about 60 tractor trailers per day that will no longer haul waste out of these neighborhoods.

The bill will reduce the amount of waste that private transfer stations can accept by 50 percent in North Brooklyn and 33 percent in the South Bronx and Southeast Queens.

It also promotes the development of new recycling and organics processing capacity and provides exemptions for waste transfer stations that export waste by rail. The capacity reductions will take effect at each transfer station's annual permit renewal beginning October 1, 2019.

It also prohibits the creation of new transfer station capacity in the future in any community board that already has an unfair share of waste infrastructure.

The bill requires the Sanitation Department to submit an annual report on waste transfer stations and create a voluntary displaced employee list for any employees of transfer stations that close as a result of this law.

For additional information,
view this article on
www.AmericanRecycler.com.

Tens of millions of cigarette butts collected and recycled

Cigarette butts are the world's most littered item with nearly 4.5 trillion being tossed each year and last year in the U.S., it is estimated 1.69 billion pounds of butts ended up as toxic waste.

Since 2012, when TerraCycle launched its first cigarette recycling program, it has worked with municipalities across the U.S. and abroad to collect hundreds of millions of butts around the world. In 2017, in the U.S. alone, TerraCycle collected tens of millions of cigarette butts from over 50 cities and 6 months into 2018, is poised to exceed those numbers.

A combination of organic material and cetyl acetate plastic render cigarette butts unrecyclable and destined for landfills. However, through the TerraCycle Cigarette Butt Recycling program, individuals and organizations can place the Cigarette Butt Receptacles in high traffic areas, collect the waste and ship it to TerraCycle for recycling into usable material for new products such as shipping pallets, ashtrays and plastic lumber.

Load monitoring

■Continued from Page B1

such as: where it comes from, what materials are in the waste stream, what can be diverted and repurposed, what are the destination points for disposal today, and what are the economics of materials that might be diverted?"

Bradley said the C&D waste stream is unknown and unmanageable for two reasons: The mix of materials is variable by job site, type of construction or renovation, the mix of building materials in regions of the country and even the variability of materials based on the stage of the job as it evolves from start to finish.

Secondly, the points of origin for waste stream materials are constantly changing. It makes for a moving target that is very difficult to measure and characterize materials.

"Jobs start and stop. Crews go from one location one month, across town to a completely different type of project with completely dissimilar materials the next month," Bradley said. "These two factors combined make the C&D waste stream a single, large amorphous undefined whole."

Many municipalities are now starting to study this variable C&D waste stream component, and a few solutions are beginning to emerge into the market.

"Meaningful solutions that address the complex and variable dynamics of the C&D waste stream must be nimble, flexible, and customizable and run in real time to keep pace with the mobile and constantly changing nature of the C&D material flow. Software solutions

that have these characteristics are beginning to identify, profile, track, measure and report on the diversion of C&D materials as they are collected and transported," said Bradley.

The common characteristic of software solutions that can do this is the ability to identify and completely understand every attribute in the smallest details of the individual container and its contents of mixed material that results from construction work, and to accomplish that in real time, as it is handled.

According to Bradley, traditional waste software tracking and identification solutions focus on the route for collection and the volume of materials as a whole after they have been moved into the processing and recycling stage.

"To properly identify and measure construction materials for recycling, these new software solutions characterize materials starting at each individual job site, in each individual container and before each container of material enters the mass volume of the reprocessing stream," Bradley said. "Identifying and characterizing materials by point of origin, type of material and volume prior to entering the recycling stream pays multiple benefits."

Bradley added that knowing the waste stream in this detail and in real time will have a profound impact on C&D recycling. As Bradley explained, material diversion can now be electronically tied to individual job sites and construction permits—allowing municipalities to know what's in the construction waste stream, what diversion rates and material volumes are—current and up to date every day across their entire community.

"Understanding the waste and diversion streams in finite detail will focus the economics in a much clearer and precise way, which will enable much better opportunities for reuse, recycling and repurposing for diverted materials, and divining what's suitable for diversion aids the understanding of how to plan in the future for the waste that can't be diverted today; what those materials are and how to most economically deal with them," Bradley said.

Down the Road

Carver is optimistic about the future of waste management and believes the industry will see more technology companies enter the waste market to try and solve the issues of today.

"Monitoring devices will lead us to 'smart bins' that will provide a host of data back to the user/customer and, at some point, allow bins to call out to the hauler with a service request," Carver

said. Haulers will need to adapt to this model and adjust the way trucks are routed on a daily basis."

However, this technology is of value to haulers as well, by requiring fewer trucks, reducing the need for fuel and letting them allocate their resources where services are needed. We may even see waste companies rely on autonomous vehicles, which will help streamline THE process and eliminate Department of Transportation hour violations.

"Future developments will predict volumes of material based on types of construction permits issued, seasonality, region of the country and other variables," Bradley said. "Repurposing and recycling solutions will become adaptable to expected and predicted types and volumes of this 'source' material, and the entire circle of initial use, sorting and reuse will be even more efficient and effective."

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