



DESIGN, SALES AND SERVICE FOR BOLLEGRAAF, LUBO AND TOMRA

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### ***Waste Connections ramps up automation and fire prevention in new Plainfield, IL MRF***

Once smoke is detected in a MRF, it takes no more than 2 minutes and 40 seconds for the fire to be uncontrollable. This is what Waste Connections has learned from its experience with MRF fires. When designing its newest plant, a highly-automated single stream MRF in Plainfield, IL, Waste Connections turned to their #1 value: safety.

The new Plainfield MRF sits on the site of its predecessor, a system that suffered a total equipment and building loss after a fire in 2021. Waste Connections' local team worked with their design and construction contractors on building extra measures into the new MRF design for fire safety and prevention. David Kawa, District Manager for Groot Industries, which operates the MRF, says the fire safety measures of the new MRF compared to the old MRF are night and day. "We used all the latest and greatest technology we could find," he says.

A traditional recycling facility may just have an overhead sprinkler system and local fire extinguishers in case of a fire. But with high ceilings in many recycling systems, fires can smolder in the equipment, brewing flames that aren't high enough to trip the ceiling sensors, but can be devastating none the less. Even when sprinklers do go off, given that window of 2 minutes and 40 seconds, it may already be too late to save the system from major equipment damage. The design for the Plainfield MRF needed to incorporate fire detection at lower heights, closer to the source, to be truly effective at preventing fire damage.

The new MRF in Plainfield operates with 5 levels of fire safety and prevention, more than any other MRF in North America. Levels 1 & 2 are the traditional combination of local fire extinguisher tanks and an overhead sprinkler system. Level 3 is Fire Rover units, which monitor every area of the plant. The Fire Rovers employ an AI system to detect smoke and an infrared system to detect high levels of heat. Level 4 consists of compressed air foam units housed in all material bunkers, where fires often begin. These foam units can be deployed at the first sign of a fire, spraying foam to suppress smoke and flames before they become uncontrollable. Level 5 is an on-site high-capacity water tank storing over 245,000 gallons of water. Connected to this tank are 1.5" high-temperature rated, fire department grade hoses running throughout the rails of the plant and on the second floor mezzanine, poised to fight incipient fires.

Tim Horkay, Director of Recycling Operations at Waste Connections, says the cost of the fire prevention systems was a sizeable investment, over 5% of the total project cost. More than what would traditionally be allocated for fire prevention, it has already proven to be money well spent, as the MRF has successfully fought one potentially devastating fire in its time since startup. When flames fully engulfed both paper bunkers, on-site employees were able to spot the fire and deploy the in-bunker compressed foam units in a timely manner. The fire was extinguished before the fire department arrived and, as confirmed by Kawa, resulted in no damage to surrounding belts and controls.

#### **SALES LOCATIONS**

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When it comes to monitoring the system operations for potential incidents, Kawa says all hands are on deck. Floor operators and supervisors roam the floor with tablets, a system he calls “mobile controllability.” Among other capabilities, the tablets can be used to control the flow of material. In the event of a fire, they can quickly halt material or send it in the opposite direction to isolate the fire and properly target it with the fire prevention machinery. “The tablets help us stay dialed in, have eyes on the problem, and be able to control things in the moment,” says Kawa.

In addition to the extensive array of fire prevention strategies, The Waste Connections team put a lot of consideration into the equipment and building design to increase safety for their workers. Jerry Evans, Maintenance Manager, described the plant’s three major operating areas—the tipping floor, the processing area, and the bale storage and warehouse—as segregated and walled off to prevent fires in one area from spreading to another.

Evans says another aspect of safety is the automation. “Waste Connections has flipped the thinking that people should protect the machines,” he says. “They’ve designed this system so the machines protect the people.” To eliminate the pre-sort station, they have installed a Günther SPLITTER screen, the original auger style screen, to remove glass and other smaller items. The team also chose Pellenc optical sorters specifically for their thoughtful platform design, which takes into account the safety of those performing maintenance functions on them. Quality control on the fiber and container lines is fully automated by those optical sorters. The system’s sorting equipment was supplied by Van Dyk Recycling Solutions, Norwalk, CT. With standout features such as the SPLITTER screen and the opticals, the MRF has been able to run up to 37tph with only 4 manual sorters.

Contributing to that run time are the many design features that eliminate downtime. The low sorter count greatly reduces the number of breaks taken, and the automated equipment can process at a much higher rate than any human sorter. The plant also uses mid-system accumulation bunkers on the fiber and container lines to prevent jams from causing full-system stoppage. For example, if a jam occurs on the container line, container sorting can be stopped while the rest of the system continues running. Incoming material to the container line will be collected in the accumulation bunker, and properly metered out when the container line starts up again. The facility also has complete baler redundancy, with a Bollegraaf HBC120S single-ram baler as well as a two-ram baler. Both balers can bale all commodities in the event that the other is down.

Waste Connections continues to explore emerging fire prevention technologies that they can add to their future MRF builds. “Fire safety is a continually working project,” Kawa says. “We will never stop looking for the next best thing.”

### **Tour this facility**

Waste Connections is offering tours of the Plainfield MRF during Recycling Today’s MRF Operations Forum and Paper & Plastics Recycling Conference. [Click here to register.](#)



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### **About Waste Connections**

Waste Connections ([wasteconnections.com](http://wasteconnections.com)) is an integrated solid waste services company that provides non-hazardous waste collection, transfer and disposal services, including by rail, along with resource recovery primarily through recycling and renewable fuels generation. The Company serves approximately nine million residential, commercial and industrial customers in mostly exclusive and secondary markets across 46 states in the U.S. and six provinces in Canada. Waste Connections also provides non-hazardous oilfield waste treatment, recovery and disposal services in several basins across the U.S. and Canada, as well as intermodal services for the movement of cargo and solid waste containers in the Pacific Northwest.

### **About Van Dyk Recycling Solutions**

VAN DYK Recycling Solutions ([vdrs.com](http://vdrs.com)) is a leading supplier of world-class recycling systems for the North American waste processor and recycler. Celebrating 40 years in business, Van Dyk designs, installs and services complete systems for single stream, dual stream, commercial waste, C&D, MSW, waste-to-energy/fuel, presorted plastics, film processing, glass cleanup, e-waste, organics processing and more. In partnership with Bollegraaf Recycling Solutions, Van Dyk offers exclusive distribution of the Bollegraaf high capacity no-shear baler series. Van Dyk installs all equipment with an expert in-house team (never subcontracted), and offers extensive hands-on training and a customer support program that is unmatched in the industry.



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