

Eco Material Technologies

Qualifications Summary



Eco Material Technologies has the resources, personnel, and technical expertise to provide total long-term management programs as well as specific CCP management services.



COMPANY HISTORY

Eco Material Technologies was formed in February 2022 from the merger of Boral Resources—formerly Boral Limited’s North American coal combustion products (CCP) business—and Green Cement Inc., a manufacturer of near-zero-carbon cement alternatives. The merger combines two companies with vast resources and experience in the North American supplementary cementitious materials (SCM) industry.

Eco Material’s roots extend to the very foundations of the coal ash management industry. Boral Material Technologies traces its U.S. lineage through Monex Resources, Monier Resources, and AMAX Resources, which began processing coal ash in the early 1960s. In 2017, Boral acquired Headwaters Inc., a company with its own extensive coal ash genealogy.

In 2002, Headwaters acquired ISG Resources, which had successfully integrated numerous regionally focused coal combustion products managers and marketers to form a national network with premier customer relationships. Regional CCP management companies that were acquired to form the backbone of ISG included:

- JTM Industries, based in Kennesaw, Georgia, which began marketing concrete-grade fly ash and other coal combustion products in the 1970s.

- Michigan Ash Sales Company, doing business as U.S. Ash Company (and subsidiaries U.S. Stabilization Inc. and FLO FIL Inc.). Michigan Ash Sales Company’s business partnership with consumers dates to 1968.
- Pozzolan International (and subsidiaries St. Helen’s Investments Inc., Pozzolan Northwest Inc., and Pozzolan Northwest Bulk Carriers, Inc.).
- Power Plant Aggregates of Iowa Inc. (and subsidiaries Midwest Fly Ash & Materials Inc. and Livestock Waste Management Inc.).
- Fly Ash Products Inc.
- Mineral Specialties Inc.
- VFL Technology Corporation.

In 2014, Headwaters Resources acquired the assets of Sinew Inc. and LA Ash Products and Services. In 2016, Headwaters Construction Materials acquired the assets of Synthetic Materials, LLC (SynMat).

Green Cement Inc. is the developer of low-carbon cement products including PozzoSlag®, which enables reductions in carbon dioxide emissions approximately 90 percent below those associated with the manufacture of ordinary portland cement. The newest generation of PozzoSlag® can replace up to 100 percent of the ordinary portland cement in concrete and generates up to 99 percent less CO2 emissions.

No other company offers the capabilities Eco Material Technologies has already demonstrated for completing projects that will become increasingly common in the coming years, including conversions from wet to dry disposal methods and developing integrated programs to increase beneficial use of CCPs as an alternative to disposal.

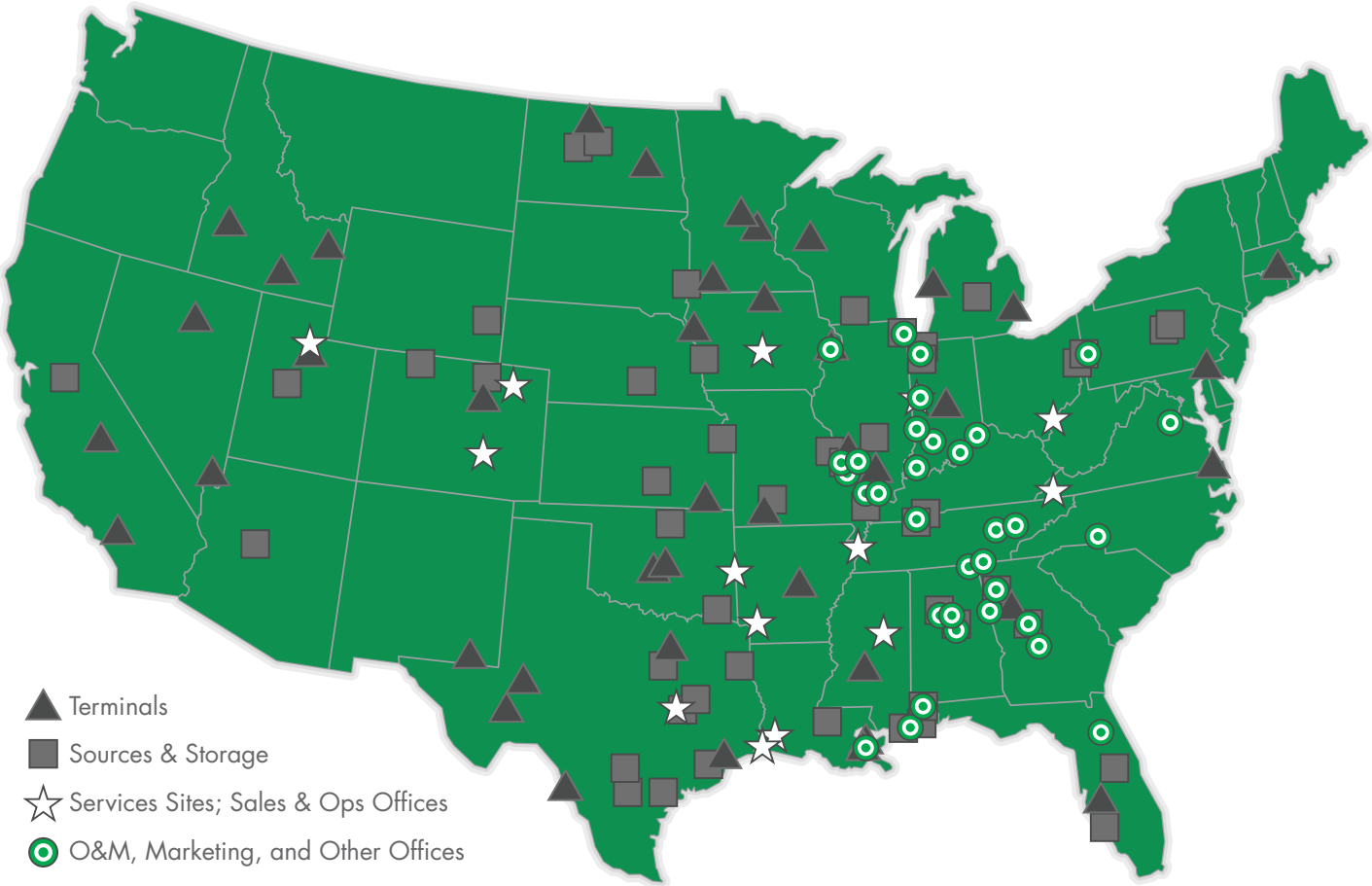


COMPANY ORGANIZATION

Eco Material’s corporate management directly supervises sales, services, research and development functions, and commercialization of new technologies. This includes oversight of the company’s research, laboratory, and manufacturing facilities in Georgia and Texas. The engineering, supply chain, and transportation groups provide additional support to operational regions. Legal and risk management, human resources, and safety functions report directly to corporate officers.

Operations are organized into three major regions. Eco Material’s East, Central, and West Regions are responsible

for bulk SCM management and marketing operations within specified geographic areas. Additionally, the LA Ash division manages and markets the SCMs produced from petroleum coke (petcoke) and other coal-fired circulating fluidized bed (CFB) boilers from around the U.S. and international markets. The business maintains significant offices in Bryan, Texas, and Salt Lake City, Utah. Operational regions efficiently serve local utility clients and end-use customers. Green Cement Inc. maintains a corporate office in The Woodlands, Texas, and a processing facility in Jewett, Texas. LA Ash has corporate offices in Sulphur, Louisiana, and SynMat’s corporate office is in Louisville, Kentucky.



SOURCES OF SUPPLY

As coal plant retirements continue—albeit likely at a slower pace after 2022—Eco Material has implemented a multi-pronged strategy to support its objective of doubling the volume of building materials sold into the North American Market by 2030. That strategy includes the following:

Fresh Fly Ash—Existing supplier contracts ensure that the majority of the company's current volumes are secure for the next five years. Nearly a third of the contracted volume is secured for the next decade. The company looks to maintain this existing portfolio and secure new contracts to augment supplies of fresh fly ash over the next five years.

Landfill Harvesting—Eco Material is already harvesting 100,000 tons annually from its Montour, Pennsylvania, monofill and plans to ramp up production at the site to close to 500,000 tons per year. In March 2023, bottom ash harvesting and grinding will commence at our Oak Grove site, in Franklin, Texas, which is expected to produce 600,000 tons annually. Construction of harvesting infrastructure is already underway at Plant Bowen, in Euharlee, Georgia, which will eventually add up to 1.2 million tons of harvested production annually. An additional 20 harvesting projects nationwide are also under consideration.

Natural Pozzolan Processing—Operations continue to ramp up at the Kirkland, Arizona, natural pozzolan mine. Once it is running at full capacity, it is expected

to process up to 500,000 tons annually of cementitious material for delivery to concrete markets in the southwest U.S. Eco Material continues to investigate new opportunities to purchase and develop additional natural pozzolan deposits.

Manufactured Product—Eco Material's PozzoSlag® and PozzoCEM® cements can replace a significant portion of the portland cement required to make high-strength, durable concrete. In addition to growing sales of PozzoSlag® and PozzoCEM®, it is anticipated that the Jewett, Texas, processing facility will ramp up sales, embarking on an automation and expansion project that will enable moving 200,000 tons of product annually.

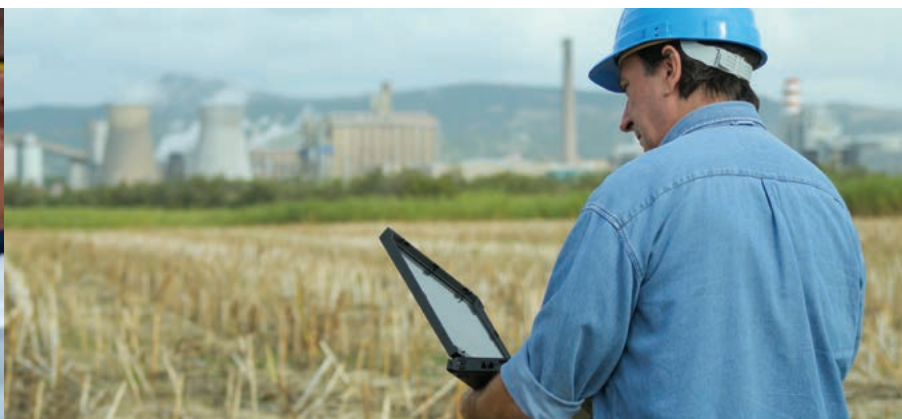
Synthetic Gypsum—As production of synthetic gypsum in the U.S. decreases, the distance from source to end user is increasing. This is providing new opportunities for delivery from sources of synthetic gypsum production that were not economically viable in the past. Eco Material's gypsum division, SynMat, is using portable technology to process synthetic gypsum produced at utility sites and increasing harvesting sales to reach these customers. An additional portable system added in 2022 at Prairie State Generating Station, in Marissa, Illinois, has doubled the capacity of processed material to 700,000 tons annually. Also in 2022, an additional sale was established of 150,000 tons per year from an existing harvesting site.



FOCUS ON QUALITY

Eco Material's Materials Testing & Research Facility (MTRF) is an AASHTO-accredited cementitious and concrete laboratory that actively participates in annual Cement Concrete Reference Laboratory (CCRL) inspections. MTRF tests more coal ash products than any other laboratory in the United States. In addition, the facility provides customers an array of concrete testing services for aggregates, cements, concrete alkali reactivity analysis, concrete sulfate testing, hardened concrete petrography, etc. The facility is staffed with ACI-certified personnel managed by innovative leaders in the SCM industry. Eco Material also has two full-time Quality Control Directors available to customers and employees as needed.

Changes in raw materials necessitate new concrete trial batches to confirm fresh and hardened properties. Concrete trial batches/mixes determine water demand with fly ash, determine compressive strength capabilities, and test concrete durability. Eco Material's Technical Service Representatives (TSRs) work with customers in performing these trial batches to ensure they are conducted properly and evaluated correctly. TSRs and the MTRF are fully capable of preparing trial batches for the customer. This is a major benefit to concrete producers. Concrete trial batches generally take 28 days to complete and are a service provided specifically for customers.



FOCUS ON SAFETY

Eco Material's safety program encourages all personnel to ensure a safe working environment. This is a bottom-up, CEO-approved program that rewards company personnel for identifying risky practices, potential hazards, and tools to improve working conditions. Executive management reviews each facility's safety program annually. The annual safety review encompasses a thorough evaluation of all safety-related documents, steering committee activities, documented improvements and, when needed, injury reports. Employees also hold weekly safety meetings, and managers meet monthly with the steering committees. In addition to providing a comprehensive Corporate Safety Manual and mandatory safety training for employees, a scope-of-work-specific safety procedure is developed for each Eco Material site before work is begun. All incidents are announced internally, nationwide, via correspondence from our corporate safety directors.

The safety process is a continuous improvement system that concurrently achieves organizational and individual behavioral change in the uncompromising pursuit of zero incidents. This is achieved through total employee involvement and management's commitment to provide resources and support on a company-wide basis. Employee engagement in hazard identification and reduction, training, safety meetings, audits, behavioral safety, and committee work has resulted in significant reductions in recordable incidents over the past decade. Eco Material's Total Recordable Incident Rate (TRIR) for calendar year 2021 was 1.64, significantly below the industry average. The company's Experience Modification Rate (EMR) was .53.



LEVERAGING ECO MATERIAL'S NATIONAL SCM FOOTPRINT

Eco Material Technologies:

- Manages more than 24 million tons of SCMs at utility sites.
- Markets over 8 million tons of SCMs each year.
- Serves over 4,000 unique customer locations from 100+ sites across 41 states.
- Operates more than 55 free-standing terminals, a railcar fleet of over 2,700 cars, and a growing fleet of over 400 trucks.
- Maintains a fleet of over 670 pieces of heavy mobile equipment that includes bulldozers, excavators, dump trucks, forklifts, loaders, graders, railcar movers, service trucks, smooth drums, vacuum trucks, trailers, sweepers, tractors, and water trucks.

As the only SCM marketer with a national presence, the company enjoys advantages in both logistics and sales. Due to the volumes of material that the company moves, Eco Material is able to negotiate favorable rail rates on a national basis and enjoys similar purchasing power with trucking contractors where their services are required.

Eco Material's extensive infrastructure of rail and truck transportation, storage facilities, and knowledgeable people experienced in SCM distribution and marketing mean greater market reach. This allows the shipment of SCMs to more distant markets and sales to a wider range of applications and manufacturers—including concrete, cement, and wallboard producers—with whom Eco Material has established customer relationships.

PLANT SERVICES

Eco Material's Plant Services division is the largest disposal contractor in the United States for coal combustion products (CCPs). The division has over 30 years of experience and has provided services at over 100 utility sites, handling all types of CCPs as well as coal and limestone.

Eco Material has experience in constructing and operating landfills of all sizes up to 200 acres. No other company possesses the historical perspective, national scale, operating experience, and political and regulatory expertise that reside within the company.

Our experienced management team emphasizes decision-making on the regional and local levels. Support services are unparalleled and include a materials research laboratory in Atlanta, Georgia—providing a full range of research and testing capabilities; ability to work with local engineering groups throughout the United States

and Canada; and a national logistics team that negotiates competitive freight rates with railroads and trucking companies while coordinating operations of the company's extensive transportation fleet.

Our Plant Services division enjoys a strong financial base and supportive structure. Eco Material's national footprint helps insulate against the financial consequences of regional economic downturns, regional weather disturbances, and the effects of quality or operational outages at individual plants. Comprised of personnel from our utility and industrial services practice, the division has more than three decades' experience designing, permitting, constructing, operating, and closing solid waste disposal operations for coal-fueled utilities and other industrial clients. Plant Services employs over 150 people serving utility clients and end-use customers across the United States and Canada.



Utility services are tailored to the needs of individual clients, ranging from managing specific aspects of CCP disposal to providing complete turnkey operations and maintenance services. Comprehensive quality control systems and rigorous health, safety, and environmental standards ensure best practices company-wide. By stressing these program attributes, Plant Services is able to build solid long-term customer relationships.

More important than size, though, is our experience in developing and using industry best practices to ensure regulatory compliance and cost-effective operations. For instance, advanced GPS equipment is utilized to ensure that disposal facilities are constructed according to plans and at the lowest cost. Strategic relationships are maintained that ensure access to the most up-to-date equipment, including partnering agreements with two national heavy equipment suppliers and a leading national truck supplier.

Some of the services offered include:

- CCP impoundment excavation, remediation, and closure
- CCP laboratory testing and analysis
- Market studies
- Marketing and utilization
- Operation and maintenance of FGD fixation facilities
- Research and development services
- Sales
- CCP transportation and logistics
- Site assessments
- Solid waste management consulting
- Pond beneficiation and encapsulation
- Wet-to-dry conversions
- Coal treatment facility management and operations



RESEARCH SERVICES

Material Characterization Studies. Eco Material offers material characterization services to evaluate a byproduct's potential for beneficial use. Characterization involves developing a material sampling plan, sample collection, physical testing, chemical analysis, and interpretation of results. Our Material Testing and Research Facility's capabilities include microscopy, particle size analysis, carbon content, magnetic content, X-ray fluorescence, atomic absorption, and various wet chemistry analyses, in addition to conventional construction material testing.

Material Handling/Processing Evaluations. Evaluations of material handling and processing requirements are conducted based on material characteristics, bench or pilot-scale processing, and experience with similar materials.

Market Studies. Eco Material's market study team evaluates product capabilities, explores market opportunities, and recommends the most environmentally and economically sound approaches to marketing or disposal scenarios. Our experience in design and operations has led to many unique approaches to waste stream minimization by placing an emphasis on reuse and recycling.

ENVIRONMENTAL CONSULTING SERVICES

Environmental Planning and Environmental Site Assessments. Eco Material's team of environmental professionals frequently works with project planners to review proposed projects for environmental considerations early in the planning stage. Early review of environmental considerations helps to produce a project that minimizes environmental concerns and allows for realistic project scheduling.

Project Permitting and Compliance Audits. Eco Material's experience includes the permitting process for storm water, wetlands, air, stream alteration, solid waste utilization, and all aspects of landfill permitting. We also perform facility compliance audits to ensure that operations are in accordance with applicable laws and permits. Operations audited include stabilization plants, material handling facilities, landfills, and various utilization projects.

WET-TO-DRY CONVERSIONS

Eco Material helps utilities to facilitate converting their plant's ash handling system from a wet ash handling system for disposal to a dry system for fly ash and bottom ash sales. Our company's vast experience in material handling systems, equipment, and engineering and design provides the utility with turnkey systems. Eco Material oversees the entire operation, coordinating the design, engineering, and construction of the conversion with all appropriate utility personnel. When the conversion is complete, the dry ash can be marketed for beneficial use.

COAL TREATMENT FACILITY MANAGEMENT

Eco Material provides personnel to operate coal treatment facilities on a 7-day-per-week, 24-hour-per-day basis to treat up to six million tons of coal per year.

ENGINEERING AND DESIGN SERVICES

Material Handling Systems and Equipment. Our specific design experience covers systems that include dry material silos, pneumatic and dense phase transfer, baghouses, belt and screw conveyors, mixing, pelletization, screening, dewatering equipment, and related instrumentation and control systems. Eco Material also has engineering services capabilities for the design, procurement, and installation of bulk powder storage facilities and rail-to-truck terminals.

CONSTRUCTION MANAGEMENT SERVICES

Field Representation and Contract Administration. Eco Material provides construction services by acting as the owner's agent during civil or industrial construction projects. This arrangement ensures that construction activity progresses smoothly and that the construction conforms to the design specifications.

Landfill, Civil, and Mechanical Industrial Construction. Eco Material provides construction management for heavy construction projects, particularly in the field of solid waste disposal and land reclamation. Our industrial construction management services cover mechanical and vertical constructions for equipment modifications or new plant construction.



GREEN CEMENT INC.

Green Cement Inc. has patented a technology to convert fly ash and other materials into value-added manufactured products such as its proprietary PozzoSlag®, a cementitious material that exceeds the strength, durability, and performance of traditional cement in concrete. Green Cement's production process does not rely on a kiln, eliminating inefficiencies and extreme energy requirements so that its manufacture generates approximately 99 percent lower CO2 emissions than those associated with ordinary portland cement production. Since commencing manufacturing operations at its Jewett, Texas, facility in 2012, Green Cement has sold over 2 million tons of PozzoSlag®, which has been specified for interstate highway, airport runway, and other heavy/civil concrete projects.



LA ASH

Through its LA Ash division, Eco Material has a national license and cooperation agreements with a major circulating fluidized bed (CFB) boiler manufacturer. The LA Ash division has also expanded its suite of CFB-related products by offering current and future national CFB clients an environmentally sound method for converting ash into usable products. The new offering provides international CFB owners and operators with an alternative to disposal by beneficially utilizing these CFB products.



SYNTHETIC MATERIALS, LLC

Eco Material's Synthetic Materials, LLC (SynMat) subsidiary expands Eco Material's flue gas desulfurization (FGD) byproduct and synthetic gypsum markets. SynMat is responsible for approximately 20 percent of all the synthetic gypsum that is consumed in the U.S. A leader in the industry, our expert staff works aggressively with our partners to identify and realize significant cost savings and process improvements.

Experience in the design and operation of FGD dewatering plants across the United States has enabled SynMat to optimize the design of its horizontal belt filter system. The design not only meets but exceeds the gypsum production requirements—and provides the added reliability of a filtration system to continue operation with minimal maintenance and downtime. Having hands-on experience in the operational and maintenance aspects of the FGD dewatering process, SynMat understands the importance of providing a system that can operate efficiently under the 24/7 demands of the power industry.

SynMat specializes in:

- Engineering, procurement, and construction of gypsum dewatering systems.
- Reducing production risks to utilities by taking ownership of the gypsum in slurry form.
- Operation and maintenance services for new and existing FGD systems.
- Water treatment operations and maintenance.
- Dewatering of gypsum to produce a quality gypsum cake to meet the needs of customers in the wallboard, cement, and agricultural industries.



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