

elements



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Way Forward



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Whatever It Takes

Maybe it's an insurmountable task, an impossible deadline, or an immense coverage area. Maybe it's different time zones or even different hemispheres. The seemingly insuperable nature of some project characteristics can be quite prohibitive, even deal-breakers for some companies.

But not for CEC.

We welcome the toughest of tough challenges. We thrive on creating ingenious ways to get things done for our clients. We're recognized for our ability to deliver, even when faced with unconventional project parameters and complexities. If we need to engage more staff from across our footprint, we'll do it. If we need to be on-site in a location where our clients need us most, we'll be there. If we need to work day and night, we'll make it happen. It's what differentiates us, and it's what compels our clients to come back to us time and again. The two projects that are featured in this issue of *Elements* demonstrate CEC's commitment to successful project completion regardless of the challenges inherent to our assignments.

Kenneth R. Miller, P.E.
President and CEO
November 1, 2016

Elements in your email

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On the Cover:

Cleanaway Waste Management Limited (Cleanaway) has been helping Australian industry, business, communities, government and households reduce, reuse, recycle and safely dispose of waste for over 50 years.



Civil & Environmental Consultants, Inc.

www.cecinc.com

Charting the Way Forward

Cleanaway's Path to Delivering Best-in-Class

CEC assisted with an operations review of a plant at the Erskine Park Landfill near Sydney with the leachate pre-treatment facility depicted here.

When you're the leading waste management, recycling, and industrial services company in a particular country, you set the tone for the implementation of best practices within that country and hold yourself to a higher standard for customer service.

In Australia, that company is Cleanaway Waste Management Limited (Cleanaway), and in addition to holding that distinction, it is also one of the top 20 waste management companies in the world. It therefore makes sense that the company would engage individuals and entities with proven best-practice expertise at a global level to support the company's operations.

To access the highest-level resources available, Cleanaway looked outside Australia to a broader, more global resource pool, ultimately selecting CEC to help identify opportunities for operational improvements that would be significant to the post-collections business, and to help manage the implementation of those operational changes.

In the summer of 2014, a CEC team made an initial visit to Australia to begin the process of identifying those opportunities. Clete Elms, Cleanaway's general manager for Victoria and Tasmania, served as regional manager of post-collections at the time. "One of the key differences between CEC and some of our local consultants was that the team from CEC brought a deep operational understanding and practicality, having worked in the operating business as well as in consulting," Elms noted. "When looking at the issues around some of our landfills head-on, incorporating an operational background certainly bolsters your understanding of how to deal with an issue or what that issue might cost to rectify or remediate."

In two weeks, the CEC team reviewed permit, licensing, engineering, construction, and compliance requirement information provided by Cleanaway and state regulating agencies for all of the landfill assets. They completed an on-site performance review

of 14 facilities in the Melbourne, Sydney, Brisbane, Adelaide, and Perth areas, speaking with personnel and management to get a general day-to-day comfort level with the sites and the work being performed by the current team. They also created initial drafts called Facility Assessment Reports.

"It wasn't a 'We know everything and we'll tell you how to fix it' approach, but rather a collaborative, fact-finding approach that positioned the engagement for success," said Elms. "CEC spent the time to understand the history, complexity, and nuances of our business, asking what the business knew or didn't know, and what the goals and expected outcomes of the engagement were to be." Over the next three months, CEC collaborated with the Cleanaway operations team to assess and prioritize conclusions and recommendations.

"We looked at the situation both from an Australian and U.S. regulatory perspective

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"One of the key differences between CEC and some of our local consultants was that the team from CEC brought a deep operational understanding and practicality."

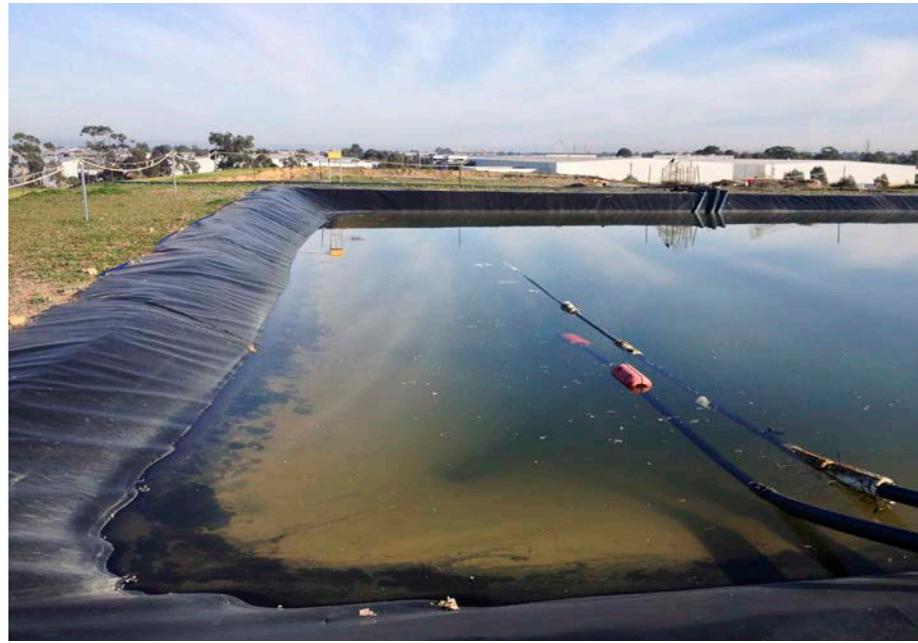
—Clete Elms, Cleanaway General Manager for Victoria and Tasmania

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and quantified what the potential environmental and engineering-related liabilities were or could be,” said CEC Vice President Randy Bodnar, who led the team. Particular emphasis was placed on compaction techniques and site density, surface water control features, leachate generation and sources of infiltration, cover soil excavation patterns and use quantities, equipment utilization, and rightsizing. “We provided supporting explanations why those items were identified, and offered recommendations to mitigate potential impacts and achieve conformance. We then quantified each item into a dollar figure.” With a complete picture of the operations, CEC prepared a long-term strategy for cell planning and operational support working in close coordination with Cleanaway.

CEC helped put a framework around where Cleanaway was relative to worldwide best practices and identified a structure and platform to help the company implement operational improvements. CEC supported Cleanaway from a technical aspect, integrating with the waste company’s operations and engineering teams to facilitate the recommendation programs, which were rolled out the following winter and spring in 2015.

Cleanaway reset its provisions relative to the landfill assets, and that included



Each Cleanaway facility’s needs were evaluated as to whether there was adequate storage capacity, including this leachate storage dam.

rehabilitation and post-closure provisions for historical operations as well as provisions established to achieve the best practices that CEC identified. The company committed to spending \$40–\$45 million over the next four years as part of this program.

Ed Hood, a principal with CEC at the time of the initial visit, eventually joined Cleanaway in July of 2015, picking up the baton to continue driving the remediation and rectification program. “The success of the program is directly related to the

individuals at CEC and Cleanaway and the level of engagement achieved, even across the Pacific and amidst the obvious time zone barriers,” said Hood, now head of engineering and compliance for Cleanaway.

Several projects have been completed to date, including enhancing landfill gas collection, leachate collection (after examining the company’s current leachate disposal options and assessing its future needs for leachate management and disposal), and stormwater management controls.

Chief Executive Officer and Managing Director Vik Bansal joined Cleanaway in August 2015 and is leading Cleanaway on the firm’s “Good to Great” journey. “Through Vik, we have an unwavering approach to best-in-class—whether it’s customer service, safety, or landfill standards such as landfill gas, leachate, or capping,” said Elms. “We now have a very structured national approach to how we achieve and deliver best-in-class.”

“The company as a whole is developing clear visibility,” Hood said, “as well as standards for operation and execution relative to one way: the Cleanaway way.” ■



Typical earthwork construction took place at this landfill facility to prepare the liner.



Bob Evans Farms, Inc. is constantly improving sustainability and reducing environmental impact at all of its restaurants in 18 states across the U.S.

152 sites. 15 states. 4 months. For a project requiring both due diligence and survey services, those are some staggering numbers.

But that’s what was asked of CEC at the end of December 2015 by Bob Evans Farms, Inc. The food service, processing, and retail company based in New Albany, Ohio, has more than 500 full-service restaurants in the Midwest, mid-Atlantic, and Southeast regions of the United States.

Bob Evans was transitioning from the status of owner to renter on a number of its restaurant properties. Mesirow Realty Sale-Leaseback, Inc., an affiliate of Chicago-based Mesirow Financial Holdings, Inc., had signed a letter of intent to acquire 152 Bob Evans sites. Subsequently, National Retail Properties, Inc. out of Florida acquired the rights to most of the sites. The Columbus, Ohio, law office of Vorys, Sater, Seymour and Pease LLP had been engaged to assist with the letter of intent, the purchase agreement, and other documents relating to the transaction.

“We knew that we were going to require certain materials with respect to all 152 sites, and that we were going to need to obtain those in a fairly short time period,” said Dan Minor, a partner in the Columbus office of Vorys. “We also recognized that

it would be a large undertaking with many surveyors involved. That’s why we began to look at national companies capable of accommodating that kind of a request.” Vorys’ prior history with CEC—and in particular, CEC Vice President and Survey Practice Lead Jeff Miller—gave the firm confidence CEC could handle the request.

To meet the requirements and the tight April 15, 2016, deadline for this challenging fast-track project, 164 team members from 15 of CEC’s 20 offices (9 of which provided survey services and 12 of which provided environmental services) completed more than 11,000 hours. Significant up-front coordination of crews and office staff and effective interoffice cooperation were the keys to ensuring that aggressive timelines were met. According to Andy McCorkle, a geologist and principal in the environmental practice of CEC’s Columbus office, “Everyone was fully committed to getting this done.”

CEC performed Phase I Environmental Site Assessments (ESAs) on all 152 sites, each an approximately one- to three-acre tract, helping Bob Evans manage potential liabilities and make informed decisions. CEC also performed ALTA Surveys on all 152 sites.

“This endeavor presented some additional challenges in that the requirements for surveys can vary from county to county as well as from state to state,” said Miller.

With such short project timelines, some survey field work was completed even before title policies were issued for the sites. In the end, it was one of CEC’s largest and most complex interoffice surveying projects completed.

“When a decision is made, generally speaking the business folks want to get it done as soon as possible,” remarked Minor, adding that “CEC had a very difficult task given that the title insurance companies and the buyers’ counsel were reviewing the work product, providing comments, and reacting to others’ comments at different times. CEC was able to deliver in this scenario, and we got the deal closed in the timetable the parties wanted.” ■



The ALTA surveys had some additional challenges in that CEC was required to be licensed in each of the 15 states to offer and perform land surveying.

Spotlight

Planning for Success with Senior Principal *Roger Pearson*

Q What made the transition to an engineering firm inviting to you as a planner?

A I was excited to become part of the CEC family, having teamed with this great organization several times over the last 15 years. One of the things that always impressed me about the culture of CEC is the care that is taken with the work—the genuine concern for the technical solution, and to have it leave the client smiling. When I started realizing that I was going to make a change, joining a firm with that kind of approach to its work was something that appealed to me because that's the way I approach my practice. There was a cultural compatibility.

Q CEC recently launched CEC PLANNING with you at the helm. Describe this addition to the firm's services lineup.

A What we hope to deliver through CEC PLANNING is actually much larger in scale than simply site planning; it's a full-service approach to master planning that we're calling economic master planning. This is a four-stage process including **market analysis**, the **master plan** itself as a response to that market analysis, the **financing plan**, and the **implementation plan**. We will utilize collaborative methodologies to develop consensus-based planning solutions, and apply global experience and perspective to site-specific planning challenges. That's essentially

what I've been doing for the last 10-15 years. We didn't call it economic master planning back then, but that's the way I have practiced master planning.

Q What have been the first steps as CEC launches this service?

A As part of the CEC PLANNING rollout, so to speak, I've been meeting with CEC office leaders to understand what's going on in their regions—what those guys care about. I think the personalities in our offices are set up for exactly what we're trying to accomplish. This is a natural way for CEC to reinforce our long-term commitment to the efforts of the economic development agencies, industrial development corporations, and quasi-government agencies, as well as the efforts of private sector real estate developers in the regions where we provide services.

Q What is notable about the depth and diversity of your experience?

A One of the things I think that is unique about my career is the variety and contrast of places where I have lived and worked—ranging from a couple years in Omaha in the middle of America, to a couple years living in Riyadh, the capital and middle of Saudi Arabia. I grew up in Baton Rouge, lived on both the East and West Coasts, and from Detroit to D.C. to Dallas.



Then, of course, I worked in Europe, Asia, Africa, and there was a two-year project in South America out of Brazil and Argentina. "So what?" people might ask. I genuinely believe it creates flexibility and an ability to understand and respond to a variety of cultural influences and challenges. The formation of CEC PLANNING offers our clients global perspective with effective local solutions.

Q How do you address unexpected issues in planning projects?

A When entities have a property they want to do something with but are not sure yet what that something is, we can look at the developable area, analytically determine a range of use options, and then evaluate those options based on a range of factors unique to each situation. Large-scale economic master planning really requires that you understand what's going on behind the scenes of the project—what are the drivers, what is the impetus, what were the existing challenges? Every project is, in a broad sense, determining and/or establishing a vision that is unique and achievable. Sure, most planning projects encounter aspects that no one anticipated, but CEC brings an enhanced ability to crystal-ball and to manage change during the course of the project to help reach that initial unique and achievable vision.

Q Why is this approach different from what is currently available?

A What I see in the domestic U.S. marketplace are engineering firms on one hand that provide a suite of site development engineering services, and when I say this, I mean all aspects from ecological to geotechnical to water resources to environmental, etc., and on the other hand, there are the planning and landscape architecture firms with no engineering in-house. What CEC PLANNING does is bring those two together around what we're calling economic master planning. I apply my 30+ years of skills and expertise as a master planner to sets things up in the early stages in a way that supports the engineering side as it takes over during the implementation. The strength in what we're doing is that we're combining CEC's site development engineering expertise with an economic master planning approach, and by doing so we're bringing all of the skills and expertise of CEC to bear on an economic master planning challenge. We're working together to leverage and harness the incredible strengths that CEC has as part of the planning process. This combination positions CEC to be very effective. ■

WATERSHED MOMENT: A NEW TOOL GETS AT THE SOURCE

Following the Toledo water crisis in 2014, when an algal bloom in Lake Erie contaminated the drinking water and prompted a "do not drink" advisory, there were numerous public discussions about what caused the problem and how to prevent it from happening again. The Lucas County government took a highly proactive stance, aiming to identify sources of nutrients and hotspots throughout the Western Basin of Lake Erie watershed and make it easier for the public to access and understand available information. In June of 2015, CEC was engaged by the County's Board of Commissioners to identify pollutant sources in need of controls to help reduce algal blooms in the basin.

CEC compiled and presented data through a user-friendly interactive Geographic Information System (GIS)-based mapping tool called the Nutrient Source Inventory (NSI). "The NSI is based on publicly available data generated by state and federal agencies, some of which was obtained by the federal Freedom of Information Act," said CEC Senior Project Manager Tim Murphy.

After a peer review process, the tool will be linked to the Lucas County website, making location-based nutrient source information available to elected officials, stakeholder groups, and the general public so that all may better understand the status of their watershed. The next phase of the project will see the comprehensive data utilized to perform detailed modeling to identify the amount of nutrients coming from the sources.

Murphy has given several presentations on the NSI's functionality, including at a sustainability gala and a free public tutorial, both hosted by the Toledo-Lucas County Sustainability Commission. He also demonstrated the tool for members of the Toledo Metropolitan Area Council of Governments and the Ohio EPA. The NSI can be replicated in other parts of the country suffering from excessive nutrient loadings in their watersheds. ■



IN THE NEWS: Strong University Ties for CEC Knoxville

Our Knoxville operations made many headlines in May 2016 when it was announced that CEC would be the first private tenant at Cherokee Farm Innovation Campus (CFIC), a collaborative effort of the University of Tennessee (UT) and the Oak Ridge National Laboratory. A highly successful groundbreaking ceremony

and press event took place, attended by Tennessee Governor Bill Haslam and UT College of Engineering Dean Dr. Wayne Davis, among other dignitaries. "Having CEC even closer to our students and faculty will provide us with a partner that can offer real-life, practical experience to our students," said Davis.

CEC has an exceptional relationship with the UT College of Engineering, employing a number of graduates, offering internships, and providing cooperative learning opportunities. One such opportunity is the new TECH SPEAK Technical Presentation Series for students and professionals, a collaboration between CEC, the University of Tennessee Knoxville Department of Civil & Environmental Engineering, and CFIC.

The series launched in November 2016 and will occur once each semester, always with at least one presenter from CEC and one from UT. The first presentation in the series will be given by CEC water resources engineer Steven Casey, P.E., CPESC, and UT Biosystems Engineering & Soil Science Department professor Daniel C. Yoder, Ph.D., P.E. The program will detail current



issues regarding the Tennessee Municipal Separate Storm Sewer System (MS4) permit.

Future presentation topics will be driven by current industry

trends and issues, such as new or evolving regulations or improvements in engineering design. The series is open to all UT students, not just those in engineering, as well as university faculty members and CEC's local business partners and clients. CEC invites you to submit ideas for future topics. ■

Elements is published by Civil & Environmental Consultants, Inc. for clients, business partners and other associates.

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Cherokee Farm Development Corporation
Cleanaway Waste Management Limited

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Back Cover: PHOTO CONTEST WINNER ADAM MEHEVEC / AUSTIN

CEC sponsors a Photo-of-the-Month contest encouraging employees to submit photos from their work sites. The winning photo is published on CEC's internal website and social media pages.





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This photo was captured while documenting the liner installation for a new oil and gas waste disposal landfill in Mentone, Texas. The liner contractor is shown pulling out a roll of 60-mil HDPE for the primary liner of the double-liner system. CEC was hired to provide on-site construction quality assurance during the liner, soil, and concrete installation.