

Water Executive Forum

R&D Plays Important Role at BWA Water Additives

By Mike Henley

MANCHESTER, U.K.—2011 was a significant year for BWA Water Additives as the company changed ownership with its by Berwind Corp. from Seera Investment Bank of Manama, Bahrain. The move marked Berwind's move into the water treatment business. The sale last year also marked the second time in three years that BWA had changed ownership.

In addition to the change of ownership during the middle of the year, long-time president and COO Paul Turgeon stepped down as of Jan. 1. David Cartmell, Ph.D., continues to lead the company as executive chairman and chief executive officer. This article in *INDUSTRIAL WATER TREATMENT* provides an overview about BWA and the firm's view of the water business.

Background

BWA began in 1973 as a part of Ciba-Geigy Corp. In 1992, Ciba-Geigy sold its flame retardants and water treatment chemical businesses to FMC Corp., which held the company until 1999 when it was sold to Great Lakes Chemi-

cal Corp. Great Lakes later became Chemtura Corp. with its merger with Crompton Corp. By then the business was known as BioLab Water Additives, and in 2006, Chemtura sold it to Close Brothers Private Equity. BioLab became known as BWA Water Additives, and was bought in 2008 by United International Bank, which later became Seera Investment Bank.

Dr. Cartmell joined Ciba-Geigy and remained with the firm through 2004 before the formation of Chemtura. For a brief time, he was an executive vice president with Octel (now Innospec), but he left that company to work with Close Brothers (now CBPEL) to buy the BioLab business from Chemtura for \$85 million. With that deal, he rejoined BWA as executive chairman and CEO and chose to continue in that role with the recent Berwind purchase.

Ownership Change

As top executive of BWA, Dr. Cartmell is excited about the future. "Berwind is an investment-financial group that buys and holds companies for the long-term. They invest in these companies liberally, which lends great stability to the business," he said.

Despite the ownership change, Dr. Cartmell expects little change to BWA's operations because Berwind acts as an investor. "I believe it will continue as it has been. We went through a long process of getting to know Berwind, and also talking to other companies they own."

BWA presently has some 80 employees. The company doesn't own its own production facilities, but instead uses some 25 facilities for manufacture of its treatment products.

"If all those who contribute to making products and our sales agents, we would be a company of hundreds and hundreds of more employees," Dr. Cartmell observed. When the firm was owned by Great Lakes, the employee head count was more than 400 people. For several years, BWA has focused on its core focus of research and development. One aspect of the business—product manufacture—is essentially outsourced, and the firm also relies on outside agents as a part of its sales program.

Markets

BWA has two basic water markets—industrial and desalination. On the industrial side, the firm markets its molecules to service companies that incorporate its specialty treatments into their



David Cartmell, Ph.D., executive chairman and CEO of BWA Water Additives.

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BWA Water Additives Summary

Owner: Berwind Corp.,
based in Philadelphia.

Company headquarters: Manchester, England.

Chairman and CEO: David Cartmell, Ph.D. (based in the U.K.)

Other top executives: James Argyle, CFO (based in U.K.); and J.C. Shia, vice president Asia Pacific (based in Singapore).

Number of employees worldwide: Approximately 80

Primary water business: Specialty water treatment biocides, antiscalants, and corrosion inhibitors. Brand names offered by the company are Belclene®, Belcor®, Belgard®, BromiCide®, Bellasol®, Belsperse®, Bellacide®, and Flocon®.

Primary markets: Industrial water, thermal and membrane desalination; municipal water (membranes); and oilfield.

Locations: Atlanta, Ga.; Tokyo, Japan; Shanghai, China; Singapore; and Dubai, U.A.E.

Manufacturing: Contracted out to facilities in the United States, England, Canada, China, Taiwan, Japan, and Italy.

products. Treatment applications for the company's technology include cooling, boiler, and produced water, oilfield and gas markets, and desalination. Other niches for the firm's products are pulp and paper, and food production.

On the desalination side, BWA sells antiscalant polymers and antifoulants, both maleate-based, as well as carbonic acid-based polymers directly to operators of thermal plants. Treatments for membranes tend to be marketed through service companies, but some large endusers will buy directly from BWA.

Dr. Cartmell said growth opportunities in the water business include the Asia Pacific, the Middle East, North Africa, and North America. Factors driving growth include water use efficiency,

and environmentally friendly products.

R&D

BWA prides itself on its technology development, so research is an important part of the company's staffing, and the number of those researchers is equivalent to the direct sales staff.

"Our business model involves service-differentiated additives that are dependent on our intellectual property and our intellectual prowess, so research is a key part of BWA's approach," Dr. Cartmell said. About half of the research staff time is devoted to basic research, and the remaining time is devoted toward customer-oriented service projects, or research on application issues that come up with the use of treatment products.

Product development. One of the main drivers in BWA's research is a severe-service additive that will work well in challenging conditions such as temperature, scale prevention, or deposit control, Dr. Cartmell said. Company research also aims to develop products that are environmentally friendly.

One example of products meeting this criteria are new Belclene® 810 polymaleate antiscalant recently developed by the company that are considered to be biodegradable, according to the OECD 302B biodegradability test. Applications include thermal desalination, cooling water, reverse osmosis membranes, and industrial cleaning, among other uses.

BWA has also come out with a new biocide addition to its Bellacide® product line. The broad-spectrum product is a non-oxidizing quaternary biocide. The U.S. Environmental Protection Agency approved the product in 2006-2007, and presently BWA is working to get state registrations for the product. Research has shown the biocide to be effective against *Legionella*, sulfate reducing bacteria, and slime formers (*Pseudomonas*). Applications include cooling towers and cooling water, oil refineries, and other applications with severe operating conditions. ■

Key words: BIOCIDES, DESALINATION, MARKETS, MEMBRANES, PRODUCED WATER, REVERSE OSMOSIS, SCALING

COAGULANTS AND FLOCCULANTS THEORY AND PRACTICE

By Dr. Yong H. Kim
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Considering the wide-spread use of polymeric flocculants in the field, there are very limited sources readily available to many interested readers. This book will serve as a useful text for them to be well equipped on the subject.

Yong H. Kim is senior research engineer. His research interest includes the application of water-soluble polymers to solid-liquid separation, the surface phenomena of colloidal suspension, and water disinfection. He is a graduate of the Seoul National University (BSChE) in Korea and earned a Ph.D. in Chemical Engineering from Kansas State University in 1987. He currently holds five U.S. patents after his eight years' professional career and has published more than 20 technical publications. He is a member of American Institute of Chemical Engineers, American Chemical Society, Water Environment Federation, and American Water Works Association.

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