

## TETRA TECH'S INVESTMENT IN DIGITAL TOOLS TURNS WATER DATA INTO ACTIONABLE INTELLIGENCE

*Tetra Tech partners with clients on a range of water services from asset management and financial planning to engineering and operations.*

**T**etra Tech (Pasadena, Calif.) is a global provider of consulting and engineering services. With 27,000 employees worldwide and revenues of \$4.5 billion, Tetra Tech supports global commercial and government clients focused on water, environment, sustainable infrastructure, renewable energy, and international development. The company's "Leading with Science" approach emphasizes the pursuit of innovative, technical solutions for its clients. In January 2023, Tetra Tech completed the acquisition of UK-based RPS Group.

*Jill Hudkins, Tetra Tech President. Ms. Hudkins is a nationally recognized expert in high-end, innovative water treatment solutions. She has led the planning and advancement of integrated water resources and advanced treatment strategies for the implementation of seawater, brackish water, and potable and non-potable reuse water programs.*

### **EBJ: How does Tetra Tech participate in the water market? What are some highlights of your water business unit?**

Jill Hudkins: Tetra Tech has provided innovative water management solutions since the company's founding. Our world-class engineers and scientists leverage industry-leading technical expertise, in-depth local knowledge, and sustainable approaches to provide resilient water futures for our clients. We're proud that we have a deep bench of talent and can participate in all aspects of the water market.

Tetra Tech has been ranked No.1 in water by Engineering News-Record (ENR) since 2003. ENR also ranks our firm No.1 in related practice areas including water treatment and desalination. We have significant expertise in water supply, distribution, treatment, and storage and we have designed hundreds of water treatment facilities, some as large as 500 million of gallons per day (MGD) in capacity. Our team is focused on "Leading with Science"® and leveraging technology to deliver sustainable and scalable solutions.

Tetra Tech's leadership position provides us with a unique vantage point in the industry. We are particularly excited about the digital transformation that water industry clients are undertaking. This will have a significant impact on the way our

clients deliver services to their rate payers and customers. We are helping clients to remove data silos and unlock the potential of their data, enabling them to use new sources of business intelligence across their planning, capital delivery, and operations teams. We are supporting large water utilities in modernizing their supervisory control and data acquisition (SCADA) systems and partnering with clients on cybersecurity programs as they address an evolving digital landscape. Often these services provide recurring revenue streams from master service agreements and subscription-based digital software delivery. This business model bolsters and adds stability to our revenue while supporting a sustainable and secure digital water future.

### **EBJ: What is being done to preserve water supply in the United States? How has climate change impacted the way that this is handled?**

Hudkins: In many parts of the United States, particularly in the West and South, water supplies are stressed and under pressure. The Colorado River watershed is the largest in the western United States and has faced drought conditions for most of the last two decades. As a result, water users are renegotiating aspects of their water rights agreements. Climate change is only exacerbating these problems. Many of our clients are challenged with the severity

and frequency of extreme precipitation and flooding events. And our coastal clients are under the constant pressure of sea level rise.

All of this means that there's a growing recognition that additional water supplies need to be more resilient. As a result, our clients are increasingly relying on recycled water from water reuse facilities to meet their water supply needs. These sources are proving to be more resilient and sustainable than other supplies being considered.

Tetra Tech has held a leadership position in this sector for decades. In fact, nearly two decades ago we played in a key role in the design of the first phase of Orange County Water District's Groundwater Replenishment System (GWRS) in California, the largest recycled water program in the country. More recently, we completed the design of the recycled water facilities for Pure Water Oceanside, San Diego County's first recycled water system. In Florida, Tetra Tech completed design and permitting for a 3 MGD Groundwater Replenishment Program for the City of Clearwater, which when constructed will be one of the first application of advanced technologies for indirect potable reuse in Florida. Similarly, Tetra Tech is currently designing an indirect potable reuse treatment train as part of the expansion of recycled water facilities in Bartlesville, Oklahoma. It would be the first indirect potable reuse plant in that state.

### **EBJ: Beyond climate change, are there other risks facing water supplies?**

Hudkins: One of the biggest challenges facing utilities that use groundwater is contamination from per- and polyfluoroalkyl substances (PFAS). PFAS are group of chemicals used to make coatings and products that are resistant to heat, oil, and water. The US EPA has begun efforts to regulate these contaminants, but many states have already proceeded with regulations.

Tetra Tech is at the forefront of this issue, bringing nearly two decades of relevant experience and qualifications. **This is an excellent example where we are Leading with Science.** We have research partnerships with some of the world's leading universities; presented at numerous con-

ferences and published a wide variety of papers; assisted various government agencies with sampling, characterization, and remediation/treatment at hundreds of federal facilities across the country; supported numerous states at a countless number of contaminated sites; are unbiased having evaluated several PFAS removal technologies across a broad range of water quality characteristics; and we have designed some of the country's highest profile municipal treatment plants, including the largest ion exchange PFAS Treatment Plant in the country in Yorba Linda, California.

Tetra Tech has developed the depth and breadth of talent across the country to help clients mitigate the impacts of PFAS contamination on their water supplies.

**EBJ: How will water prices change over the next five to 10 years? Will the digital water trend impact prices?**

Hudkins: The price of water can vary greatly from city to city, but generally speaking, the annual increase in the price of the typical municipal water bill has outpaced inflation for quite some time. As a result, some customers struggle to pay their water bill. This has led to increased awareness around both the value and affordability of water, particularly in low-income communities. That's important because a disproportionate share of infrastructure is often located in low-income communities. Fortunately, there's growing recognition that historic environmental justice and equity issues in these communities can no longer be perpetuated.

To remedy this imbalance, utilities are undertaking various strategies. We work with our clients to integrate, embed, and prioritize gender equity, diversity, disability, and social inclusion (GEDSI) principles and practices into every project we implement. We employ context-specific, interdisciplinary approaches in project design, delivery, and evaluation.

Implementing digital water tools is one of the tactics utilities can use to address this issue. For instance, establishing and maintaining trust with your customers is critical for water utilities, and that's one role digital water services can provide.

Tetra Tech is supporting water utilities by providing customers and stakeholders with data in a more open, transparent, and accessible manner. This allows our clients and their customers to have fast and reliable information to inform their communications and the decision-making process. Ultimately, this allows Tetra Tech to help clients prioritize and expedite investments that benefit these communities, without making bills for essential services unaffordable to low-income households.

**EBJ: How is innovation shaping the industry in terms of data collection, water treatment, and effluent monitoring?**

Hudkins: The volume and frequency of data available to our clients has steadily increased over time. One of the comments we often hear is, "I have all of this data and I don't know how to bring it together to optimize operational and capital spending". Fortunately, Tetra Tech has a range of water experts familiar with all aspects of the water utility ranging from asset management and financial planning to engineering and operations, and we are able to partner with our clients to deliver value-generating solutions. Tetra Tech has also invested in digital water tools that allow us to turn this data into actionable intelligence.

To further these efforts, Tetra Tech has acquired three digital water companies in the past two years—IBRA-RMAC, Enterprise Automation, and TIGA. These companies have a track record of leveraging the industry's latest technologies to develop innovative, data-driven, and scalable solutions. We are excited about working with our clients to benefit from the convergence of automation, advanced analytics, intelligent planning, and asset management in the water industry.

**EBJ: How is the wastewater industry taking advantage of resources to convert waste-to-energy? What is needed to produce higher amounts of energy from wastewater treatment plants?**

Hudkins: Tetra Tech uses various strategies to help clients reduce energy consumption, improve operations, and lower the carbon footprint of their wastewater treatment facilities. One of the first steps

we often take is conducting an audit of the current operations. This helps us identify opportunities for the facilities to operate more sustainably and use less energy. We've helped several clients modernize energy-intensive equipment such as aeration and pumping systems. We have also helped our clients migrate their power systems to renewable energy sources such as solar or wind.

One of the most exciting areas of innovation is supporting wastewater treatment utilities in their transformation into resource recovery facilities. These resource recovery facilities can offer a drought-resistant water resource and help augment regional raw water supply, play a critical role in the recycling of nitrogen and phosphorus to improve soil health for agriculture, and become "energy factories" by providing a source of substantial low-carbon thermal energy for indoor heating and cooling as well as renewable natural gas (RNG) generation facilities. Increasingly, wastewater treatment utilities are receiving food waste organics redirected from landfills along with the organics already present wastewater and converting these streams into high-value RNG. This RNG can either be used to power city fleets like buses or garbage trucks or injected directly into the gas pipeline.

A good example of the "energy factory" model is the wastewater utility in Boulder, Colorado which converts the biogas it produces into pipeline quality and injects the gas into the local pipeline. The gas is then sold on the market for a profit based on its fuel value plus an additional RIN credit value. We are very supportive of this 21st-century role of wastewater utilities in helping the transition to a more circular and sustainable future.

**EBJ: Have you noticed any other important trends?**

Hudkins: There are several trends impacting municipal water agencies including droughts, climate change, environmental regulations, aging infrastructure, decarbonization, and cybersecurity. As highlighted earlier, regions susceptible to or experiencing water shortages face an increasingly urgent need to develop sustain-

able and diverse water supply portfolios.

One Water strategies, intelligent planning, and digital water advances have facilitated our clients' ability to integrate and manage multiple sources at any given time. Climate uncertainty, environmental protection, environmental justice, and energy resilience for water production will drive innovation in the municipal water sector for the next decade. Some of the more proactive utilities are already implementing plans to comprehensively address these trends.

**EBJ: Congratulations on the acquisition of RPS. How will this advance Tetra Tech's position in water and sustainable infrastructure?**

Hudkins: The RPS Group brings to Tetra Tech 5,000 staff that are highly aligned with our approach to projects and high-end consulting services in key geographic regions that we've been targeting for future growth. Combined, we now have an organization with 27,000 employees, working from 550 offices worldwide, servicing 22,000 clients. We collectively deliver 120,000 projects a year with an annualized revenue of \$4.5 billion.

RPS is an excellent strategic fit for Tetra Tech, expanding key offerings such as water and sustainable infrastructure services including renewable energy. Tetra Tech has a leadership position in water and is working worldwide to provide clients with sustainable water supplies and innovative water treatment solutions. Our rapidly growing digital water practice is advancing water utilities programs by providing remote automation, monitoring and data analytics.

The addition of RPS expands Tetra Tech's addressable market by providing us with access to a £10 billion per year UK water market. RPS brings long-term relationships and consulting contracts with all of the major UK water agency clients. These same clients utilize RPS Group's WaterNet Pro™ software platform on a subscription basis, a cloud-based decision-making system that provides predictive analytics and visualization for water quality, hydraulics, and asset management.

The addition of RPS also advances Tetra Tech's global energy strategy by giving Tetra Tech access to a £15 billion per year offshore wind market in the United Kingdom and Europe, significantly increasing Tetra Tech's renewable energy opportunities. Tetra Tech holds top rankings with

Engineering News-Record in renewable energy for hydropower, wind power and solar power. Tetra Tech has long-term relationships with energy utilities, having provided high-end siting and permitting consulting for more than 1,000 projects in the United States. □

**Tetra Tech Completes Acquisition of RPS Group**

In January 2023, **Tetra Tech Inc.** (NASDAQ: TTEK) announced that its offer to acquire all of the outstanding shares of **RPS Group** through a United Kingdom (UK) court-approved scheme of arrangement became effective and the transaction was closed. Fellow top 5 environmental consulting firm WSP Global Inc. had announced an offer to acquire RPS in August 2022. In September 2022 a new offer was made by Tetra Tech of \$690 million beating WSP's \$640 million offer by about 8%, as reported by multiple sources. The RPS board of directors unanimously approved the offer in late September 2022. On October 11, 2022 WSP announced that it would not be revising its offer for the share capital of RPS, saying "WSP continues to value a disciplined approach to acquisitions to maximize shareholder value. With a strong balance sheet, WSP remains confident in its ongoing ability to capture future opportunities and deliver on its strategic ambitions." RPS is the largest acquisition by Tetra Tech to date. WSP completed the of the environment and infrastructure business of John Wood Group through a sale and purchase agreement for \$1.8 billion in September 2022.

Tetra Tech received an EBJ Business Achievement Award: for acquiring RPS Group, a UK-based environmental consulting and project management firm, in a deal valued at £636 million. Founded in 1970, RPS Group has 5,000 employees in the United Kingdom, Europe, Asia Pacific, and North America, delivering consulting and engineering solutions for complex projects across key service areas in energy transformation, water, program management, and data analytics. The acquisition advances Tetra Tech's market-leading positions in water, renewable energy, and sustainable infrastructure enhanced by a combined suite of differentiated data analytics and digital technologies. "The addition of RPS aligns with our strategy to be the premier global high-end consulting and engineering firm focused on water, environment, and sustainable infrastructure; and allows us to offer our combined staff even greater professional opportunities," said Dan Batrack, Tetra Tech chairman and CEO. Prior to the deal closing, RPS Group's shares traded on the London Stock Exchange.

**EBJ Business Achievement Award: Growth in Large Firms**

**Tetra Tech** also received an EBJ award for a strong fiscal 2022 that delivered 80,000 projects in 125 countries on seven continents while helping to create resilient and sustainable communities. Gross revenue was \$3.5 billion and net revenue was \$2.8 billion, up 9% and 11%, respectively, from 2021. In the fourth quarter alone, Tetra Tech received record new orders of \$1.3 billion, which resulted in a book-to-bill of 1.4x and an all-time high backlog of \$3.74 billion, up 8% year-over-year, and up 13% on a constant currency basis. In fiscal 2022, the company furthered its strategic plan by welcoming four companies: Enterprise Automation and TIGA added industry-leading software engineers and consultant expertise to address complex challenges related to water and big data; Axiom Data Science added unique expertise in technology for the analysis of massive data sets; and Piteau Associates provided global leadership in hydraulic modeling and sustainable water management for commercial clients.