

Solutions:

VOLUME I ISSUE 2

A Treadwell&Rollo Publication **SPRING/SUMMER 2005**



Our expertise has benefited projects in Northern California for almost two decades.

– Craig Hall



Treadwell & Rollo opened their Sacramento office, pictured above, on April 1, 2005.

DIALOGUE

Through offices in San Francisco and Oakland, Treadwell & Rollo has provided geotechnical, environmental, and earthquake engineering services to Sacramento and the Central Valley since our founding in 1988. This region in the heartland of California is experiencing unprecedented growth, and our workload there has substantially increased over the last few years. In order to serve our many Sacramento and Central Valley clients and be part of this dynamic era in the region, we have recently opened an office in Sacramento. As with our other two locations, our Sacramento office will remain committed to providing effective engineering solutions while addressing environmental concerns, all with an eye toward lowering overall development costs.

A NEW OFFICE IN A FAMILIAR LOCATION

Although the office location is new for us, our work in the area has been extensive over the last decade. T&R professionals have worked with clients on inner city brownfield development, litigation >



The Capitol Towers building is the first of several residential high-rise developments planned for construction in downtown Sacramento.

[see DIRECTIONS inside]

> CONTENT

DIALOGUE

A new office supports the services T&R has been providing in Sacramento and the Central Valley since 1988.

DIRECTIONS

T&R's expertise provides solutions for high-rise developments' specialized geotechnical issues.

TRANSITIONS

Evaluation and remediation of groundwater supply is becoming a vital issue in California. Voluntary Cleanup Program assists in redevelopment of former industrial area along the Stockton Channel.

NEWS

Golf Tournament raises scholarship funds for local high school students.



Craig Hall

Craig Hall is a Senior Engineer and leads the geotechnical marketing efforts at T&R. He has over 16 years of engineering expertise in areas including ports, roadways, landfills, pipelines, dams, and low- and high-rise commercial buildings. He has provided geotechnical and environmental engineering, project management, and construction observation services for public works agencies, developers, attorneys, solid waste clients, and international mining clients.

[cover story]

in soil and groundwater contamination cases, site remedial engineering, regulatory agency negotiation and compliance, insurance cost recovery, and water resources. Our clients include developers, architects, structural and civil engineers, contractors, municipalities, government agencies, and medical and educational groups.

The greater Sacramento area consists of Sacramento, Yolo, Placer, and El Dorado Counties, with growing adjacent counties including Merced, San Joaquin, and Stanislaus. In expanding the firm's geographical coverage with this new office, T&R hopes to better serve existing clients with projects in the Central Valley, and develop new clients locally. With the strong presence of agencies like the Army Corps of Engineers and a pool of talented employees from local universities, T&R's presence in the Central Valley is an exciting next step for the firm.

A RUNNING START

No stranger to the Central Valley, T&R is already well known for its environmental and geotechnical work in the area. Our environmental clients include the City of Stockton Housing and Redevelopment Agency, for whom we have provided litigation support, site characterization and remediation, brownfield redevelopment, regulatory agency negotiation and compliance, Phase I and II environmental site characterizations, and leaking Underground Storage Tank site remediation. A T&R team is assisting a municipality with litigation and mediation support, regulatory agency negotiation, public presentations, remediation system engineering, city-wide groundwater monitoring, and municipal water supply well testing. The broad variety of environmental work we are currently offering includes litigation support and flow modeling for another municipality.

Our geotechnical teams in the Central Valley have also been busy. In downtown Sacramento, we provided geotechnical engineering services during design and construction of the Meridian Park Tower, a 150-foot office structure with two basements on a mat foundation. Our seismic retrofit services are recognized throughout the Bay Area, and were most recently used by the Department of Transportation when it was upgrading its existing Department of Transportation Headquarters, Annex Buildings I and II in Sacramento. T&R provided geotechnical design criteria for micropiles installation as part of the upgrade and oversaw the micropile load tests.

We have been called upon many times by our clients to determine the most appropriate slope stabilization scheme for landslides, levee failures, and slope distresses. Recently, we completed two slope stability projects at Hetch Hetchy in Tuolumne County for the San Francisco Public Utility Commission—the Hetch Hetchy Early Intake Switchyard and Hetch Hetchy Switchback Road.

With such diversified experience, we also provide expert-witness consultation on a variety of project types. Additionally, we are frequently called upon to provide technical assistance and input into environmental impact reports (EIRs).

MOVING FORWARD

Our expertise in providing effective environmental and geotechnical solutions has benefited projects in Northern California for almost two decades. Working closely with multidisciplinary teams, we have become known for developing practical and scientifically sound solutions to the earth-related issues faced by our diverse clients throughout the region. We look forward to continuing and expanding this work in our new Sacramento office.

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For more information on our Sacramento office, please contact Dean Iwasa at dhiwasa@treadwellrollo.com or (916) 565-7412.

Dean Iwasa has experience in areas with complex subsurface conditions and seismic upgrade and repair of earthquake-damaged buildings. He provides geotechnical investigation, design, consultation, and construction observation services for projects including industrial and residential buildings, bridge foundations and approaches, land and marina developments.



Dean Iwasa

HIGH-RISE RESIDENTIAL BUILDINGS — SACRAMENTO IS READY

Downtown Sacramento is undergoing a period of unprecedented growth and development. However, along with the benefits of strong growth comes the frustration of clogged freeways and seemingly endless commutes. The solution to gridlock is complex, but one major element is creating appealing downtown living options. This year the City of Sacramento has over 20 central-city residential projects either under construction or in the development stage. A few of the proposed projects will consist of high-rise residential developments that will usher in a cultural and life-style renaissance that has proven to be very successful in the San Francisco Bay Area.

Earlier this year, Treadwell & Rollo completed a geotechnical investigation for a proposed twin-tower, 52-story high-rise building in downtown Sacramento. When completed, the Capitol Towers building will be the tallest structure in Sacramento. The building site is bound by Third, Fourth, and L Streets, and Capitol Mall to the south. Plans are to construct a building with twin towers at the northwest and southeast corners of the site. The towers will be constructed over a common one-level, below-grade parking garage that will occupy the entire city block. An excavation of about 15 feet below street grade will be required for the proposed below-grade parking level and building foundations.

According to the project structural engineer, preliminary dead-plus-live foundation loads for each tower are approximately 196,000 kips. Layers of weak, potentially liquefiable soil were encountered beneath the building site; these deposits are not strong enough to support the weight of the proposed high-rise building without experiencing excessive settlement. As a result, T&R recommended that the new building be supported on driven piles. The piles will transfer the building loads onto stronger soil, which is deep beneath the ground surface and the layers of weak, potentially liquefiable sand deposits. With several thousand piles needed to support the twin-towers, T&R's expertise in deep foundation design helps optimize the design of the pile capacities, resulting in a safe and economical building foundation system.

T&R is optimistic that high-rise living will become a normal part of Sacramento's downtown fabric over the next decade, and we look forward to lending our expertise to this important development in the life of the city.

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Treadwell & Rollo been serving clients in Northern California since 1988 and has played a major role in the success of many high-rise residential/commercial developments. In addition to experience with the common geotechnical issues facing high-rise developments, T&R has unique expertise with high-rise construction in dense urban environments.



David Dixon

David Dixon has managed and conducted remediation projects, hazardous waste investigations, pre-acquisition site assessments, underground tank closures, environmental regulatory compliance audits, and air permitting for 16 years.



Dustyne Sutherland

Dustyne Sutherland has been a member of T&R's environmental group for 5 years. She has performed soil and groundwater investigations, Phase I Environmental Assessments, managed databases and prepared technical reports.

COOPERATION KEEPS STOCKTON REDEVELOPMENT ON SCHEDULE

Treadwell & Rollo has provided the Stockton Housing and Redevelopment Agency with environmental engineering services since the mid-1990's. Our largest effort in Stockton has been to provide regulatory compliance services, site characterization and remediation, and technical support to legal counsel during the planning and construction of the Stockton Event Center.

Located along the Stockton Ship Channel, the Event Center site had been used for various industrial purposes including ship construction and repair, bulk fuel storage, steel fabrication, automobile sales, and light industrial applications. Over the years, the City had acquired some of the lots and developed a conceptual plan for redevelopment of the area as a recreational and commercial center. However, much of the area was impacted by soil and groundwater contamination caused by the past industrial activities.

Several properties that the City planned to purchase for the development were in various stages of investigation and remediation due to contamination by petroleum releases to soil and groundwater. As a result, the Department of Toxic Substances Control (DTSC), Regional Water Quality Control Board (RWQCB), and San Joaquin County Environmental Health Department (SJCEHD) were all involved in certain aspects of the work.

Treadwell & Rollo prepared Phase II Environmental Site Assessments and Preliminary Endangerment Assessments for 10 parcels of land, followed by extensive negotiations with the DTSC and SJCEHD. DTSC permitted the City to enter into the Voluntary Cleanup Program (VCP), which allowed the City to proceed with parcel-specific health risk assessments and selection of remedial action plans. We prepared an inclusive Remedial Action Plan and Feasibility Study that emphasized focused soil remediation and in-situ groundwater remediation for parcels that had prior pump-and-treat, ozone sparging, and vapor extraction mitigation approaches.

A Remedial Design and Implementation Plan, prepared with input from the site developer, contractor, and City representatives, was approved by DTSC and implemented. When soil contamination was discovered during the demolition of buildings on one parcel, we prepared and executed a soil management plan that included over-night soil analysis and assessment, so that a minimum amount of unplanned excavation was required by SJCEHD.

The Stockton Event Center is now home to the Stockton Ports baseball team, and additional parcels are being remediated and developed as recreational and commercial properties.

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PERCHLOROETHENE (PCE) CONTAMINATION IN CENTRAL VALLEY, CALIFORNIA

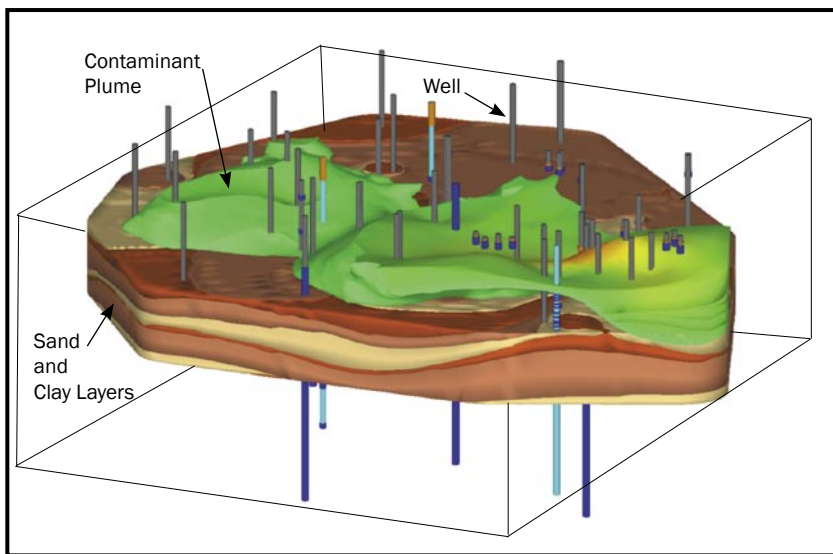
Treadwell and Rollo is assisting Central Valley towns in the maintenance of their groundwater supplies. At issue are areas of groundwater contamination, commonly called contaminant plumes, which contain perchloroethene (PCE) and other contaminants from chemical releases such as industrial waste, gasoline from service stations, and dry cleaning chemicals.

intermixed with finer-grained clay and silt layers, which can limit the vertical movement of groundwater. For our clients, a key question has been “To what extent do these clay and silt layers limit the downward movement of water and plumes?”

The question is important because our clients’ water supply wells may be affected by the downward movement of the plumes.

For these projects, we are evaluating the contaminant releases; PCE movement through the soil, aquitards, and ground

In addition to performing and managing environmental investigations and remediation activities, Patrick Hubbard provides expert witness testimony and litigation support. He has negotiated workplans and cleanup criteria with regulatory agencies, designed investigation strategies and remedial actions, calculated contaminant transport and fate, evaluated potential seismic risk, and directed aquifer analysis and field testing.



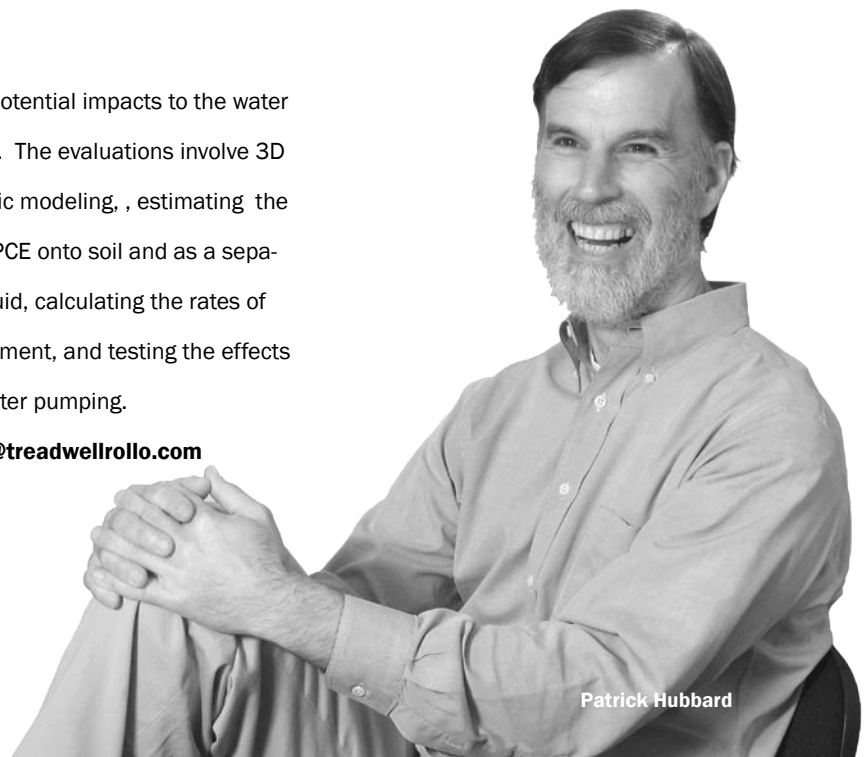
3-D Model of Subsurface Showing Well and Contaminant Plume

The releases have resulted in a number of contaminant plumes in the towns. These plumes are hundreds to thousands of feet long and hundreds of feet deep, since the groundwater tends to move downward in these portions of the Central Valley. The groundwater is pumped from numerous supply wells, several of which are near the contaminant plumes.

The PCE plumes move through complex layers of sand and gravel. The layers are

water; and potential impacts to the water supply wells. The evaluations involve 3D hydrogeologic modeling, estimating the trapping of PCE onto soil and as a separate PCE liquid, calculating the rates of plume movement, and testing the effects of groundwater pumping.

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Patrick Hubbard

THE PULSE OF THE PROFESSION

Environmental Business Journal's recent issue (Volume XVII, Number 11/12, 2004) featured a comprehensive look at the state of the consulting and engineering industry.

Treadwell & Rollo features prominently in this issue. A profile of our president, Phil Tringale, describes the firm's approach to business development—focusing on people and relationships, and providing technical excellence that draws repeat clients. Phil also stresses the role of effective networking and a formal marketing program.

In a longer and more far-reaching article about the firm, Phil reports on the firm's banner year in 2004—record revenues for both the geotechnical and environmental groups—as well as discussing some

NEWS

11TH ANNUAL GOLF TOURNAMENT

For several years Treadwell & Rollo has been a proud sponsor of the Port of Oakland Employees' Scholarship Fund Annual Golf Tournament. In addition to playing in the 11th Annual Golf Tournament held at the Round Hill Country Club in Alamo, California on May 23rd, T&R employees staffed and provisioned an Oasis Spot on the golf course providing participants with refreshments as they played.

Proceeds from the tournament provide scholarships to Oakland Unified School District students who excel in academic studies, community service and extracurricular activities, and are pursuing their educations at post-secondary institutions. Since its inception in 1995, the scholarship program has awarded 167 scholarships totaling more than \$300,000. Treadwell & Rollo was pleased to partner with the Port of Oakland Employees once again in this endeavor to assist local youth in achieving their goals.

of its major projects. Phil predicts 20 to 30% firm-wide growth over the next three to five years.

Even with such impressive numbers, T&R intends to grow and diversify without acquiring other companies, preferring instead to acquire good people who are seeking a career in a firm of T&R's size and areas of expertise. With a large percentage of repeat business (80% at last count), T&R can offer a solid outlook to the people who make the firm what it is.

TAKE NOTE

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PHOTOGRAPHY Frank Tapia

TYPOGRAPHY Franklin Gothic, Bell Gothic, Love Letter

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