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H-R's NY/NJ OFFICE IS BUSTLING H-R WORKS AT WTC & BIG DIG

Message from the President

These are exciting times at H-R. Our young NY/NJ office is bubbling with business, and we expect that office will continue to grow. We now have four staff members working in Boston on two different contracts for Boston's Big Dig. In our Salem, NH headquarters, we are busily working on multiple challenging geophysical projects.

Garrick Marcoux and Alexis Martinez, our NJ office anchors, have been stretched to keep up with the NY-area projects. Garrick and Alexis are especially proud to be working at NY's World Trade Center, where they are providing high resolution video documentation of casing and rock socket conditions in new deep drilled shafts at 7WTC.

*Boston's Big Dig project may be winding down, but it will need careful construction monitoring for a while yet. H-R has started a new multi-year subcontract to provide survey services to the Project management. As a result, we were very fortunate to add new staff with extensive previous Big Dig experience – **Caroline Devost, Mike Ryan, and Jim Walsh.** They work in Boston and stay focused on the job at hand. **Carl Gruszczak** has been in Boston on a different subcontract for us for nearly five years, and continues to be dedicated to his portion of the Project.*

Meanwhile, back at the ranch in NH,

*Lyn Mercer and Bill Desmarais maintain H-R's infrastructure for all of us ... and you. **Jim Coffman** is a travelin' man and continues to spend as much time on geophysical projects in NY, NJ, and elsewhere as in New England. **Steve Grant** carries much of H-R's seismic project load and has wowed many a client this year with his insightful geophysical interpretation. In addition to conducting geophysical surveys across the northeast and as far as Indiana, **Jeff Sullivan** stepped forward as a well-received speaker on geophysical methods at two technical events this year.*

***Mohammed Hayat** ended his geophysical internship in August, and he will return from Australia as a regular staff member. **Jeff Reid** has been semi-chained to his desk juggling proposals, active and pending projects, equipment, field crews, and clients ... and dropping nary a one. **Gene Simmons** continues to be H-R's point man on special technical projects as well as carrying his share of normal project work. And I, I stand in awe, as always, of what H-R's sparkling staff does for you with spirit, sincerity, sound scientific principles, and some true personal sacrifice.*

*H-R's staff makes me proud to be a part of H-R. Let us make you proud to have H-R a part of **your** team. **Call us!***

Cordially,

*Dorothy Richter
President*

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H-R Works at the World Trade Center

We are all still coming to grips with what happened in New York last year. Seven World Trade Center, located just north of the twin towers, was one of the buildings that collapsed on 9/11. The cleanup is over, and preparations have begun for a new foundation at the 7WTC site. H-R is very proud to be part of the preconstruction/reconstruction phase at 7WTC, where we are providing high resolution video documentation of casing and rock socket conditions in new deep drilled shafts at the site. **Garrick Marcoux** and **Alexis Martinez** of H-R's NJ office work closely with our client, **Urban Foundations/Engineering**, and the project engineer, **Mueser Rutledge Consulting Engineers**, periodically logging new shafts as they are prepared. The shafts are 36" in diameter, and many are greater than 100 feet deep. More than 100 deep drilled shafts will be logged as part of this project.

New Downhole Video Inspection System for Caissons Acquired for WTC Project

To do this important work at 7WTC, H-R acquired a new, custom-built downhole video logging system designed specifically for imaging large diameter deep shafts. The system is very robust and has a depth capability of >200 feet. The high resolution submersible Sony color video camera is equipped with high intensity lights, pans 340°, and tilts >270°. The camera has a 72:1 Zoom (18X optical, 4X digital), and produces outstanding images.

This sophisticated downhole video system will have a lot of other applications. We are keeping it based in our Orange, New Jersey office for easy mobilization anywhere along the east coast. Think about how you might use it for your projects. Then *call us!*

H-R Provides

Expertise for World Trade Center Memorial

H-R has also been involved with a temporary memorial in Battery Park for the victims of the World Trade Center attack. New York Mayor Michael Bloomberg lit an eternal flame in a black granite base for the victims on September 11, 2002. H-R's dimension stone experts, **Dorothy Richter** and **Gene Simmons**, were honored to be asked by the Chief of Structural Engineering, Structures Division, for the City of New York Department of Design & Construction to provide a geologic evaluation of the black granite base of the eternal flame memorial. The request was based in part on research they had published on thermal expansion and thermal cycling of igneous rocks in the 1970's and in part on their long history of working on the geology and rock mechanics of dimension stone.

H-R Begins a New Big Dig Contract

Yes, the end is in sight for Boston's **Big Dig**. Formally called the Central Artery/Third Harbor Tunnel Project, or simply the Project, it is the largest public highway construction project in the US with a cost of \$14 billion±. The Big Dig was a boon for lots of Boston-area firms, and H-R has had the pleasure of working with a several different clients providing geophysical, subsurface utility designation, and related professional services for various aspects of the Project through the years. Our longest involvement has been as a subcontractor for **The BSC/Cullinan Associates**, with whom we have worked closely since 1994. BSC/CA provides survey management services to **Bechtel/Parsons Brinckerhoff**, the Project's management consultant for MassHighway. H-R's **Carl Gruszczak** works with the BSC/CA folks on deformation monitoring data

management and much more.

In 2002, **Cullinan Engineering** of Auburn, Massachusetts was awarded a three-year contract to provide various engineering survey services for the Project. As a member of Cullinan's team, H-R added new staff with long prior experience on the Big Dig to work in Boston alongside other members of the team. We warmly welcome:

Caroline Devost, a Task Manager with bachelor's degrees in Civil Engineering and Geomatics from Laval University in Quebec;

Michael Ryan, CPG, PE, PLS, who provides CAD and survey support, and who has a BS in Geophysics from MIT* and a MS in Mining Engineering from the Colorado School of Mines; and

James Walsh, Instrumentation Technician, who has a degree in Electronic Technology from Boston's Wentworth Institute of Technology.

* Mike even remembers taking a geophysics course from H-R's Vice President, **Dr. Gene Simmons**, who was Professor of Geophysics at MIT from 1965 to 1989 and is now Professor Emeritus.

Welcoming More New Staff

In addition to hiring Caroline, Mike, and Jim for the Big Dig, H-R is proud to welcome and introduce:

Alexis Martinez, a Geologist/Geophysicist based in our Orange, New Jersey office. Alexis has a BS, Engineering Geology Track of City College of New York. He also has extensive course work in Civil Engineering from Stevens Institute of Technology and in Anthropology from CCNY. Alexis became an integral part of H-R's New Jersey office the day he walked in the door. He has shouldered responsibilities for the video

documentation of deep drilled shafts at 7WTC and standard downhole color video logging of rock sockets for smaller diameter shafts at another site in lower Manhattan. Alexis has a deep interest in archaeology, and is decidedly looking forward to helping us conduct a GPR survey this fall of a historic 'potters field' unfortunately located in the path of highway construction.

Mohammed Hayat does not need an introduction for many readers. Mohammed hails from Brisbane, Australia and spent 18 months with H-R as an international intern, making friends with many clients during that time. By the time his internship visa expired in August, he was leading a large GPR survey at a very sensitive construction site. While waiting for his new visa to return to H-R as a staff Geophysicist, Mohammed and his mother visited family in England, South Africa, Botswana, and Australia. The postcards were nice, but we are glad to get Mohammed back.

A professional staff with the caliber of Caroline, Mike, Jim, Alexis, and Mohammed – in addition to Jim, Steve, Garrick, Jeff, Lyn, Bill, Jeff, and Gene – is one of the many reasons why you need to *call us!*

Our Mission

To fulfill our clients' needs in geoscience, using experienced professionals who enjoy their work and are totally committed to quality and professional development.

H-R Service Areas

- **Surface & Borehole Geophysics**
Ground Penetrating Radar (GPR), Seismic Refraction & Reflection, Crosshole Seismic, Electromagnetic Induction (EM), Resistivity, Magnetics, VLF, Borehole Geophysical Logging, Borehole Video Logging.
- **Geotechnical Support Services**

Video Inspection of Drilled Shafts, Subsurface Investigations, Blast/ Vibration Monitoring, Rock Mechanics.

- **Subsurface Utility Evaluation Services (SUE)** — Research, Designation, Mapping, Verification
- **Non-Destructive Testing Services (NDT)** — Piles and Foundations, Void Detection, Rebar Detection.
- **Dimension Stone Testing & Evaluation Services** — ASTM Testing, Failure Analysis, Quarry Evaluations.
- **Litigation Support Services** — Document Review, Consulting, Expert Testimony.

How H-R's Services Were Used This Year

H-R responds to client needs, and each year we see the trends vary a bit. The 7WTC project and a previous project at Newtown Creek in Brooklyn had us video logging deep drilled shafts for caissons. Other **downhole projects** this year included **acoustic & optical televiewer** logging and **borehole GPR** in addition to standard **borehole geophysical & video logging** to provide information about fractured bedrock conditions. We also performed several **crosshole seismic** surveys to determine shear modulus of soil and bedrock at sites in Massachusetts, New York and New Jersey and a **parallel seismic** survey to determine the depth of piles at a bridge in New York.

Surface geophysical surveys continue to keep us hopping. We performed numerous large and small **utility location surveys** and found ourselves performing **GPR** surveys for objectives ranging from locating rebar and post-tensioning rods within 6" concrete slabs and delaminations in pavement to searching for structures and voids at

depths exceeding 15 feet. We are conducting repeated GPR surveys processed to produce time slices to monitor for possible changes in subsurface conditions at a sensitive construction site. **Seismic refraction** surveys to determine the depth and configuration of bedrock at landfills and construction sites were challenging as usual. **Resistivity** surveys continue to be important for relatively simple grounding design studies and more complex contamination investigations. Most of our **Magnetics** and **EM** surveys were generally run to complement other methods rather than as stand alone surveys. **VLF** surveys coupled with **Fracture Trace Analysis** remain useful for detecting bedrock fracture zones for water supply and bedrock contamination investigations.

H-R, as always, stands ready to use our expertise to help you look good to your clients. Now is the time to *call us!*

WBE/DBE Certifications

FYI, H-R is currently certified as a WBE or DBE by the following agencies:

- New Hampshire DOT
- Vermont AOT
- Maine DOT
- SOMWBA (Massachusetts)
- Mass Highway, MassPort, MBTA
- Connecticut DOT
- Rhode Island Dept. of Development
- Empire State Development (NY)
- New York State DOT
- Metropolitan Trans. Auth. (NY)
- The Port Authority of NY & NJ
- New Jersey Dept. of Commerce
- New Jersey DOT
- New Jersey Transit Authority
- Ohio DOT
- Indiana DOT
- Illinois DOT
- Texas DOT

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