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Client-Focused Services, From Start-to-Finish

At Bowser-Morner, we're known for giving our clients quality services. While many clients know us for our work in specific areas, such as geotechnical soil studies, subsurface exploration, or analytical testing, you may not know how we can help you **from start to finish on a project**. Suppose, for example, you're planning to buy some land and construct a new office building. You know you'll need reliable professional services to get your building constructed. If the idea of contracting out with five or six different companies leaves you wishing the project were already done, we can help. Here's how:

Environmental Site Assessments

First, just as with any new property or existing building you are thinking about purchasing, you'll want to know if the property has environmental issues you need to consider. Our experienced environmental scientists and geologists are just the people for this important job. They'll perform a Phase I environmental site assessment for the property according to recognized industry standards. Once you have the results of the Phase I environmental assessment, you can decide how to proceed.

Foundation Studies

Next, since a solid foundation is so important for every building, you'll need a geotechnical or foundation study to determine the soil conditions and groundwater levels on your property. That's where our subsurface exploration crews, our geotechnical engineers, and our Construction Materials and Geotechnical Laboratories come in.

After one of our geotechnical engineers discusses the project with you to find out the size and other specifics of the proposed building, he or she will talk to our Subsurface Exploration Services personnel and let them know where to advance the soil borings, and what kind and number of soil samples to collect. Using one of our subsurface exploration rigs, our technicians will travel to your site, advance the borings, log the soils in the borings, collect the soil samples, backfill the boring locations, and bring the samples to our Construction Materials and Geotechnical Laboratories.

Once the samples are in our laboratory, our geotechnical engineer will examine the samples and talk to our technicians about the tests to run. If a sample looks unusual, the technician can just call the engineer to run down to the lab and take a look. Our many laboratory accreditations and certifications, and our experienced laboratory technicians will help you rest easy knowing that you can depend on our results. After the soil tests have been done, our geotechnical engineer will evaluate the results and prepare a detailed report on the soil conditions, appropriate foundation types for your structure, and what needs to be done to get the site ready for the building's foundations. This is vital information for your building design team.



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(Client-Focused Services, From Start-to-Finish, Cont.)

Construction Observation and Field Services

After you have our foundation recommendations, your design teams can get to work. When they're done, the construction of your new building can begin! Our experienced Field Services personnel can be right there advising your designers on implementing the foundation recommendations and, as the building pad is prepared, checking the soil compaction, and observing the construction conditions. Our Construction Materials and Geotechnical Laboratories can also help out with testing needed outside the field. The International Building Code (IBC) and the Ohio Building Code (OBC) that regulate construction in Ohio require "Special Inspections" in Section 1704. These inspections are required in 14 major categories of work and are over and above the inspections that building officials commonly provide per Section 109. Special inspectors like those at Bowser-Morner review aspects of construction that require special knowledge and training to perform the work as a third independent party. At the request of our clients, Bowser-Morner offers many of these special inspection services. Our special inspection capabilities include steel construction (Section 1704.3), concrete construction (Section 1704.4), masonry construction (Section 1704.5), soils (Section 1704.7), pile and drilled shaft foundations (See Section 1704.8), pier foundations for buildings in certain seismic categories (Section 1704.9), and spray-applied fire-resistant materials (Section 1704.11). These services are provided by Bowser-Morner construction materials technicians and engineering staff under the direction and supervision of a registered professional engineer. We also can provide other special inspection services upon request.

We're Here for the Unexpected

If any questions come up or your project changes, the Bowser-Morner teams who've been with you from the start will be ready to help you. Clients say that with all of these services being provided by the same reliable company, they don't have to worry about miscommunications between different firms as can happen when several companies each work on pieces of a

project. Our clients also say they appreciate knowing that as soon as one Bowser-Morner department's work on the project is done, the next Bowser-Morner department has those results and can start on its part of the project. With no waiting for samples to be shipped, for reports to be mailed, or for other consultants to return phone calls, the time saved is important to our clients.



Ready to Help with Your Next Project

If you'd like to find out how efficiently your project can be completed using Bowser-Morner's reliable, client-focused services, just give us a call. **You can reach us in the Dayton area at (937) 236-8805, in the Toledo area at (419) 691-4800, or in the Lexington area at (859) 233-0250. You can also visit us on our web site at www.bowser-morner.com.** However you choose to contact us, we'll always be ready to help you with your next project.

A Message from Steve Bowser

As President of Bowser-Morner, I'm proud that we've been serving you, our valued clients, with the same strong commitment to excellence since 1911.



STEVE BOWSER
PRESIDENT, BOWSER-MORNER

If you have any questions, comments, or suggestions about how we can better serve you, please feel free to email me at sbowser@bowser-morner.com or call me at 937.236.8805, Ext. 202. Thank you.

DICK MARTIN: ALL ABOUT AGGREGATES

To some people, aggregates are just “rocks.” To geologists like Bowser-Morner’s Richard “Dick” Martin who have spent their lives working in the geological field, aggregates are far more than just stones. Like our clients, all of us at Bowser-Morner are glad Mr. Martin is here to share his more than 30 years of experience and expertise with our clients in the aggregate field.

As a Project Manager in Bowser-Morner’s Consulting Geology Group, Dick Martin oversees aggregates reserve projects. Mr. Martin’s responsibilities include working closely with our clients, coordinating and performing the on-site reconnaissance, determining appropriate programs of subsurface exploration, assigning testing parameters, and performing the final reserves analysis.

Mr. Martin’s experience as a geologist includes performing aggregates reserve studies, and handling mine permitting and environmental issues related to the mineral aggregates industry. He also is experienced in three-dimensional computer modeling of deposits, bathymetric survey mapping of lake bottoms, aerial CAD mapping, and exploration programs in the aggregates reserve field.

From the start, geological services have been important to Dick Martin. He holds a B.S. in Earth Science from Ball State University in Muncie, Indiana, and has done master’s-degree course work in remote sensors and the geographical sciences at Wright State University in Dayton, Ohio, and Miami University in Oxford, Ohio. Add to that the hydrology, environmental property assessment, and environmental emergency response and cleanup courses as well as all the specialized seminars he’s completed during the past 34 years, and it’s clear that Dick Martin has the background our clients need for their aggregates projects.

Being aware of the latest in the field is also important to Mr. Martin. That’s



why he’s a member of the Ohio Aggregates & Industrial Minerals Association, the Indiana Mineral Aggregates Association, the American Society of Testing Materials, the Society of Mining Engineers, technical committees, and other professional organizations.

With the comprehensive experience and background that our clients have come to expect from Bowser-Morner employees, Dick Martin is here to help with even your “rockiest” projects. To reach our Consulting Geology Group, **just call 937.236.8805, Ext. 235.** They’ll all be glad to help you.



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One Layer at a Time: Our QDP System Gets to the Bottom of Matters

As anyone who ever has studied English knows, words can be tricky. What sounds great at first can actually signal a warning we'd rather avoid. Most of us start to worry when someone says about the sample we just had tested, "Well, on the surface, everything looks fine." While "everything looks fine" sounds great, that "on the surface" phrase can mean trouble, whether it's a part that's failing, a coating that won't stick correctly, or a material you need to know the detailed composition of—and that means each layer.

How can you find out if the middle layer of your part is as thick as it should be or if the material on the bottom layer is uniform? What if you need to know what each layer is composed of? Our Quantitative Depth Profiling (QDP) system can give you the answers you need.

So what is quantitative depth profiling? As you can guess from the name, Quantitative Depth Profiling, or QDP, determines the quantity of elements in a sample, one elemental layer at a time, layer by layer, top to bottom. Similar to a cross section or an exploded illustration, QDP shows more than just what's visible on the surface.

The resulting profile tells how much of each specified element (like copper or iron) is in each layer, how thick each coating or plating is, how much each coating weighs, and how uniform the conductive materials in a sample are, each as a function of penetrated depth.

As you can also imagine, a process as technologically advanced as

this one requires complex scientific procedures and formulas. To collect and quantify the information needed for the profile, the Leco GDS-750A Atomic Emission Spectrograph used in

of study, layer definitions describe various features of the curve such as the minimum and maximum values of an analyte within the specified range, the coating weights, the

With its precision technology, our Quantitative Depth Profiling (QDP) System can give you information on every layer of your samples, top to bottom, coating to base metal.



our quantitative depth profiling system systematically removes the layers of a metallic surface in an atomic state. Depending on the source of the excited atom, such as chromium or copper, each atom emits light at a particular energy level or wavelength. The profile results are obtained in the form of intensity vs. time (how much was found during how much time). Next, the concentrations of the selected elements are determined from the corresponding sputter rate-corrected calibration curves and normalized to 100%.

After the depth profile analysis is done, the results can be evaluated in two ways, depending on your situation and what will give you the most useful information. With the first type

points of intersection of two analytes, atomic percents, weight ratios, atomic ratios, and more. In the second study type, a QDP results plot shows how the composition of a sample changes, and lets you calculate statistics. The option that will work best for you depends on your project and the information you need. In some cases, you may want the information from both studies.

Finding out how our Quantitative Depth Profiling (QDP) system can help you get to the bottom of matters, layer by layer, is easy. All you have to do is give Mike Liberty, Manager of our Analytical Services Division, a call at (937) 236-8805, Ext. 256.