



POWERFUL SOLUTIONS FOR DATA MANAGEMENT AND REPORTING

CASE STUDY

Automating Government Agency Reporting Increases Productivity and Project Efficiency for CATLIN

A multi-disciplined consulting firm, CATLIN Engineers and Scientists specializes in civil, environmental and geotechnical engineering. They are involved in a wide variety of projects throughout North Carolina, South Carolina and Georgia, from soil and groundwater remediation to the design and operation of wastewater treatment systems. As the company has grown from one office to three, so has their need to increase productivity and project efficiency. gINT software has been a key tool used in pursuit of these goals.

One of the most important undertakings where gINT has been instrumental to CATLIN's project success is an ongoing contract for the North Carolina Department of Transportation (NCDOT). Since 1997, CATLIN has been conducting geotechnical investigations for NCDOT highway projects throughout the state, including the exploration of soil, rock, groundwater and general subsurface conditions to obtain data for the design of roadways and structure foundations.

Agency Requires Compliant Reports

The NCDOT has very specific engineering and reporting requirements. Thus, CATLIN has been providing full geologic/geotechnical subsurface investigations in accordance with ASTM (American Society for Testing and Materials) and AASHTO (American Association of State Highway and Transportation Officials) requirements. In addition, CATLIN's in-house geotechnical laboratory provides testing support that includes index and other tests under modified AASHTO guidelines as required by the NCDOT. The project scope is enormous.

"We've performed bridge upgrades, bridge replacements, and new road construction assessments for the NCDOT," explains Steve Hudson, CATLIN Project Geologist. "We might have some information such as baseline surveys and right of way access, but typically we start from scratch and perform the site assessments and borings and develop the profiles based just on what we find."

CATLIN field teams have conducted Standard Penetration Testing (SPT), hand and auger borings, coastal plain rock coring and crystalline rock coring on proposed NCDOT roadway and structural alignments. For these programs, CATLIN has prepared NCDOT Roadway Inventory and Structure Investigation profiles and cross-sections.

Customizing gINT for Specific Needs

Because of the scope of the project, as well as some ambitious timelines demanded by the NCDOT, CATLIN customized gINT to help satisfy the project requirements. "In its most basic form, we use gINT to generate well construction details along with boring logs," Hudson states. "But for this project, we have gradually been adding a number of additional forms to our library."

"gINT provides the general boring logs, of course, but the State of North Carolina is very specific about their descriptions, so I customized the reports with things like legends and title sheets, creating sheets for items like pole calculations that can specify foundation requirements for light pole replacements," he explains. "But I needed help refining my work and the gINT support team assisted me in generating the numerous functions and calculations required for many of our reports."

Hudson worked closely with the gINT Software technical services department to refine more than 15 automated forms and reports to meet NCDOT reporting requirements (see sidebar).

Increased Time Savings

Prior to using gINT, “all of our reports were manually prepared on a sheet-by-sheet basis using Microstation, AutoCAD, Microsoft Word, Microsoft Excel, and hand written/typed forms,” recalls Hudson.

“Switching to gINT has greatly reduced input errors and drastically reduced the time necessary to generate the various reports,” he adds. “One of the best examples is the amount of time necessary to generate geologic profiles. A typical in-house profile would take approximately 12 hours of combined geologist and CADD time to generate. With gINT, we have reduced that time to roughly four hours total.”

Hudson points out that “using gINT to generate various reports in-house has significantly reduced our preparation time in addition to eliminating redundant data input. The reduction in time, in addition to the consistent input/output time necessary to generate the reports, has allowed for billing many forms as a ‘lump-sum’ item that in turn allows us to increase our profit per job completed in addition to saving the client money. We are constantly finding new ways to utilize gINT in our reporting processes that save us time and money.”

Summary

CATLIN’s innovative use of gINT has enabled them to dramatically increase productivity by as much as 400% on certain projects. Not only are they now using gINT on their NCDOT geotechnical investigations and all in-house drilling projects, but they also use it to generate all of their geotechnical laboratory analytical reports.

About CATLIN Engineers and Scientists

CATLIN Engineers and Scientists is one of the largest multi-disciplined consulting firms in North Carolina specializing in civil, environmental and geotechnical engineering; hydrogeology; geology; and environmental science. They have been involved in a number of projects for government, public and private organizations, including Geotechnical and Geoenvironmental Services Contracts for the NCDOT; a Long Term Monitoring Program/GIS Development and Wastewater Reuse Project for the Marine Corps Air Station (MCAS) in Cherry Point, NC; and, Environmental Consulting and Remediation Services for Koch Industries, Inc. For additional information, visit ww.catlinusa.com.

Customized Report Forms for the NCDOT

- NC Well Construction Records. Automatically fills in all pertinent information.
- NC Well Abandonment Records
 - Well Construction/Abandonment Form Letter. Used for transmittal of records to State.
 - NCDOT Soils and Rock Legend. Automatically inputs project data including “checking” appropriate boxes pertaining to drilling equipment used on project.
 - NCDOT Subsurface Investigation Title Sheets
 - NCDOT Boring Quantity Summation Sheets. Lists boring identification, stationing and offset, collar elevation, number of samples submitted for laboratory analysis, Shelby tubes collected, SPT vs. Auger footage, total footage of project, and number of borings for project.
 - NCDOT Geologic Profiles and Cross-sections
 - NCDOT Metal Pole Standard Foundation Selection Form
 - In-house and NCDOT Field Boring Logs
 - In-house and NCDOT Final Boring and Core Logs. Includes well details, field measurements (PID, SPT, etc.), lithology, location details, etc.
 - Groundwater Gauging Sheets, Field and Final. Different sheets allow for historical depth to water (DTW) data to be included on sheet so field technician has an idea of the approximate DTW before gauging.
 - Groundwater Sampling Summary Sheets, Field and Final. Report automatically calculates well volume and bails/gallons necessary for purging before sampling.
 - North Carolina Recommended Monitoring Well Information Summary Table
 - Pumping Test Summary Tables
 - In-house and NCDOT Geotechnical Testing Laboratory Summary Sheets
 - Grain Size Graphs