Abstract

The **Hydrotex Precision Fuel Management Interactive Mapping Tool** is intended to allow Hydrotex’s customers and sales force to query diesel fuel test results and display the data within a mapping environment. The goal of this project was to enhance Hydrotex’s Clean Diesel and Premium Fuel Management programs by innovating intuitive applications to share lab testing results and fuel-related statistics with current and future customers. The Interactive Mapping Tool is realized as a web application with different levels of accessibility, based on the type of user.

Results

Impact

The tool will directly impact both Hydrotex and its customers by allowing them to quickly access their data and view that information in a user-friendly way. Customers will be able to see information about their division partner, accounts, and fuel tanks and will be able to export csv files and graphs related to their data. Hydrotex staff will have a more detailed view enabling them to query information and statistics on all customers. Providing Hydrotex with a newly designed database and web services that manage updating geolocation information and weather statistics on the fly will allow Hydrotex to build other applications on top of this framework, such as a future planned data entry application for their lab technicians to more easily input data into the database.

Architecture

Server Side

The server side application is written in Java, utilizing the Spring Framework and an Apache Tomcat server. A MySQL database was created to manage Hydrotex’s customer and fuel sample data needed to populate a user’s queries.

Client Side

The client side is powered by jQuery and centered around the Google Maps Javascript API V3. Bootstrap was used for basic css styling and icons. The ZingChart javascript library powers one of the application’s central features, graphing.

Project Development Tools

- git
- Atlassian
- Bitbucket
- Maven
- GoToMeeting
- Atlassian HipChat
- eclipse
- NetBeans
- Quantum GIS
- Mercurial