

## **Geotechnical Engineering Investigation Garfield Heights Housing Development Phases 2 and 3, Pittsburgh, PA**

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### **Client Challenge**

During the middle 1980s, the City of Pittsburgh, Pennsylvania experienced rapid decline in population and economic activity. Most of the workforce within the City commuted from suburban neighborhoods. Every weekday, after 6.00 p.m. the City was deserted for the suburbs. There were little or no activities in the downtown section of the City. Through studies conducted by regional and national agencies, the City of Pittsburgh became aware of the need for high quality residential housing, specifically designed for the City's workforce. Such housing would promote the re-growth of City neighborhoods.

As part of the comprehensive plan to revitalize the City of Pittsburgh, the Housing Authority of the City of Pittsburgh, HACP, entered into an agreement with Keith B. Key Enterprises, a private property developer, to develop several properties in the Garfield Neighborhood of the City. In order to implement the development of the properties, the HACP needed to verify that the location of the proposed development is free of historic coal mining activities. Therefore, the HACP issued a task order request to Multi-Lynx Companies, Inc. to conduct a geotechnical engineering investigation of the location for the proposed development.

### **Scope of Work**

The objective of the investigation was to provide the data necessary to support site preparation, and design and construction of residential housing and support facilities. The existing development consisted of a bench with a surface elevation of approximately 1174 feet above mean sea level, and a second lower bench to the South at an approximate elevation of between 1040 and 1100 feet above mean sea level. Coal was believed to have been mined in the vicinity of the proposed development.



***Recovered Subsurface Material***

After conducting field investigations and laboratory analyses of representative field soil and fill samples, Multi-Lynx developed and issued specific geotechnical engineering recommendations for site preparation, building foundation, pavement design, site grading, and construction management.



***Drill Rig on Project Site***



## Geotechnical Engineering Investigation Northeast C-17 and C-130 Landing Zone Naval Air Engineering Station, NAES

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### Client Challenge

The Naval Air Engineering Station, NAES, Lakehurst, New Jersey required the performance of geotechnical engineering investigations for use to support and develop a *Requirements Documents* for the construction of a Landing Zone to conduct aircrew training for Northeast C-17 and C-130 aircraft units, the Air Mobility Warfare Center, and the United States Air Force, USAF Weapons Instructor Course Flight Operations at Lakehurst, New Jersey. The work demanded compliance with Lakehurst NAES and Federal Aviation Administration requirements concerning work near active airfield areas, security clearances required for airfield entry and several other security clearances for work in national security facilities. The objective of the investigation was to prepare a single report that would include a site plan showing boring locations, boring logs, and laboratory test results. The report would also describe field and laboratory activities, area geology, the existing pavement sections, and onsite soils, groundwater conditions, presence of contaminated materials, recommendations for subgrade treatments and earthwork, the suitability of onsite soils for construction purposes, and recommendations for the use of existing pavement materials for use in an onsite fill.

### Scope of Work

This project involved an assessment and evaluation of the subsurface conditions relating to the foundation investigation for a proposed landing zone to conduct aircrew training for Northeast C-17 and C-130 units, of the Air Mobility Warfare Center, and the USAF Weapons Instructor Course Flight Operations. The investigation provided the data necessary to support and develop a *Requirements Documents* for the construction of the landing zone.



**Landing Zone Pavement Cross-Section**



**Drill Rig on Project Site**

The assessment and evaluation was based on a two-phase geotechnical subsurface engineering investigation conducted by Multi-Lynx on the project site. Following the assessment, Multi-Lynx defined the subsurface conditions at the project site, and, based on those conditions, derived conclusions and recommendations regarding possible impacts on the proposed construction of the landing zone.

