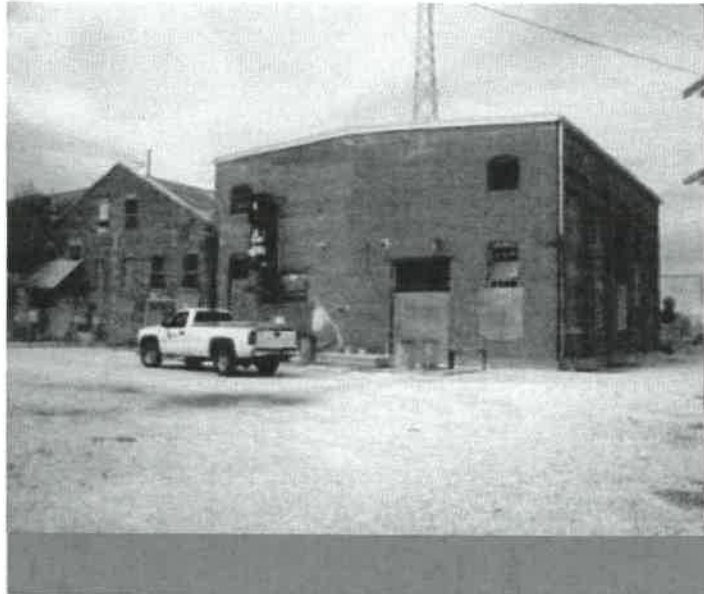




Environmental  
& Engineering  
Services



## PHASE II ENVIRONMENTAL SITE ASSESSMENT

101-111 Geraldine Street | Key West, Florida  
PM Project Number 06-3668-1

*Prepared for:*

**Keys Energy Services**  
PO Box 6100  
Key West, Florida 33040

EXHIBIT D # 9

*Prepared by:*

**PM Environmental, Inc.**  
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October 8, 2013

Mr. Stanley Rzad  
Keys Energy Services  
1001 James Street  
PO Box 6100  
Key West, FL 33041

**Re: Phase II Environmental Site Assessment  
For the Former Key West Gas and Electric Company  
Located at 101-111 Geraldine Street in Key West, Florida  
PM Environmental, Inc. Project No. 06-3668-1**

Dear Mr. Rzad:

PM Environmental, Inc. (PM) has completed the Phase II Environmental Site Assessment (ESA) report of the Former Key West Gas and Electric Company property located at 101-111 Geraldine Street in Key West, Florida. The attached report is a summary of the field investigative techniques and results of the property assessment activities.

**THE REPORT WAS PREPARED FOR THE EXCLUSIVE USE OF KEYS ENERGY SERVICES, WHO MAY RELY ON THE REPORT'S CONTENTS.**

If you have any question or concerns, please feel free to contact our office at (954) 924-1801. We look forward to providing you with qualified and professional environmental consulting services in the future.

Sincerely,  
PM ENVIRONMENTAL, INC.

Candace E. Chin Fatt  
Project Manager

Michael T. Kulka, P.E.  
Principal Engineer

Enclosure

## **EXECUTIVE SUMMARY**

PM Environmental, Inc. (PM) has completed the Phase II Environmental Site Assessment (ESA) activities at the Former Key West Gas and Electric Company located 101-111 Geraldine Street in Key West, Monroe County, Florida (hereafter referred to as the "subject property") to address the on-site Recognized Environmental Conditions (RECs) identified in PM's Phase I ESA dated July 26, 2013.

According to the Phase I ESA Report completed by PM, the following RECs were identified:

- Assessment activities on behalf of the Florida Department of Environmental Protection (FDEP) in August 2012 to further assess the historical operations at the subject property identified concentrations of polynuclear aromatic hydrocarbons (PAHs), arsenic, and lead above FDEP Soil Cleanup Target Levels (SCTLs) in shallow soil samples to the southwest of the machine shop building. In addition, concentrations of isopropylbenzene and PAHs were identified above FDEP Groundwater Cleanup Target Levels (GCTLs). This contamination appears to be associated with former operations on the subject property.
- The subject property operated as a manufactured gas plant (MGP) from approximately 1884 until 1889. Operations of MGPs typically involved the gasification of combustible materials such as coal, wood, or oil. A former retort room, which is a processing area, and a former gasometer, which was a storage container for gas, were identified on the eastern portion of the property. The by-products of the gasification process typically included petroleum products and/or hazardous substances, including coal tars. The potential exists for a release to have occurred in association with the operation of the former MGP.
- Sanborn maps document the presence of six former 25,000-gallon crude oil above ground storage tanks (ASTs) along the southern property boundary between at least 1912 and 1926. In addition, two former crude oil ASTs were identified to the east of the main building. Limited sampling has been conducted in these areas that is not adequate to assess the potential for leaks, spills, and/or overfills to have occurred in association with these former ASTs; therefore, the potential exists for subsurface contamination to be present.
- The subject property operated as a power plant, which utilized petroleum products as a fuel source, from approximately 1890 until the 1950s/1960s. The potential exists for leaks and/or spills to have occurred in association with the operation of the turbine generators and/or other equipment within the main building and on various portions of the property. The integrity of the floor beneath the generators is unknown; therefore, the potential exists for subsurface impact to be present.
- Former machine shops were identified on the property within the southwestern portion of the main building and within the machine shop. Machine shop operations typically involve the use of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former machine shop operations are unknown and may be a source of subsurface contamination.

**Phase II Environmental Site Assessment of the Former Key West Gas and Electric Company  
Located at 101-111 Geraldine Street in Key West, Florida  
PM Environmental, Inc. Project No. 06-3668-1, October 8, 2013**

The following adjoining and/or nearby RECs have been identified:

- The north adjoining properties were formerly part of the Truman Annex, which was a part of Naval Air Station Key West, from at least 1892 until 1971. Sanborn maps document the property was occupied by U.S. governmental land dating back to at least 1892. The historic usage of these properties associated with the former military base is unknown from at least 1892 until 1958. Therefore, the potential exists for operations to have included the use of petroleum products and/or hazardous substances, and/or landfilling activities to have occurred.
- The south adjoining properties, identified as 110-118 Geraldine Street, was occupied by a Standard Oil bulk petroleum plant. The potential exists for leaks, spills, and/or overfills associated with the operation of a former bulk petroleum plant to have resulted in migration of contamination onto the subject property.
- The west adjoining property was occupied by U.S. governmental land from at least 1892 until 1926. Specifically, a governmental slip was identified directly west of the property in 1892. According to previous investigations on the subject property, this property was filled in the 1890s or early 1990s. The potential exists for the fill materials to have originated from a contaminated property. Therefore, the potential exists for migration of contamination onto the subject property.

The subject property consists of eight parcels containing approximately 0.78 acres. The subject property is developed with three buildings which consist of a 13,300 square foot main building, a 459 square foot blacksmith shop, and a 945 square foot machine shop. Standard and other historical sources were able to document that the first developed use of the subject property occurred in at 1884, at which time the property was developed as a manufactured gas plant that operated until 1889. The property began to operate as an electrical power plant in approximately 1890 and continued to operate as a power plant until the 1950s/1960s. Five residential dwellings were present on the northern and southern portions of the property from at least 1892 until 1899. The property has been unoccupied since the power plant was closed down, with the exception of the construction of an electrical substation on the southern portion of the property in the late 2000s.

**THE REPORT WAS PREPARED FOR THE EXCLUSIVE USE OF KEYS ENERGY SERVICES, WHO MAY RELY ON THE REPORT'S CONTENTS.**

The scope of PM's Phase II ESA activities consisted of advancing 16 soil borings (SB-1 through SB-16), installing 10 temporary monitoring wells (TMW-1, TMW-4, TMW-5D, TMW-6D, TMW-7 through TMW-11, and TMW-14), and collecting soil and groundwater samples for laboratory analysis to investigate the RECs identified in PM's Phase I ESA dated July 26, 2013. A total of 16 soil and 10 groundwater samples were submitted for laboratory analysis of volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), total recoverable petroleum hydrocarbons (TRPHs), and 8 Resource Conservation and Recovery Act (RCRA) Metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), or some combination thereof.

Based on the soil boring logs, the general lithology consists of two to four feet of medium sand underlain by limestone to a depth of 25.0 feet, the maximum depth explored. Groundwater was encountered at depths ranging from approximately 2.7 to 4.6 feet below ground surface (bgs).


**Phase II Environmental Site Assessment of the Former Key West Gas and Electric Company  
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Analytical results indicate concentrations of PAHs, TRPHs, and metals (arsenic, barium, and lead) in the soil above the FDEP SCTLs, and VOCs, PAHs, and TRPHs in the groundwater above the FDEP GCTLs, and the Natural Attenuation Default Concentrations (NADCs), as set forth in Chapter 62-777, Florida Administrative Code (FAC), which are not defined vertically or horizontally. Based on the history of the subject property, the contaminants detected in the soil and groundwater are consistent with the historic use of the subject property as a gas and electric plant, and consistent with previously reported soil and groundwater impacts.

According to the rules set forth in Chapter 62-770, FAC, the FDEP requires that a Site Assessment Report (SAR) defining the extent of impact be completed. Therefore, additional soil borings/monitoring wells will need to be advanced on the subject property. PM recommends further investigation to delineate the horizontal and vertical extent of soil and groundwater contamination at the subject property for subsequent preparation of a corrective action plan.

This report has been reviewed for its completeness and accuracy. Please feel free to contact our office at (954) 924-1801 to discuss this report.

**Report Prepared By:**



Candace E. Chin Fatt  
Project Manager

**Report Reviewed By:**



Michael T. Kulka, P.E.  
Principal Engineer



Elliot J. Nightingale, P.G.  
Senior Consultant