



December 4, 2019

Ms. Albiona Balliu, P.E.  
Sr Project Manager  
City of Key West  
1300 White Street  
Key West, Florida 33040

**SUBJECT:** Proposal for a Site Assessment  
5224 College Road, Former Mosquito Control Facility  
Stock Island, Key West, Florida, 33040

## **1. INTRODUCTION**

Tetra Tech, Inc. (Tt) is pleased to present this proposal to the City of Key West (City) to prepare a Site Assessment (SA) for the College Road Affordable Housing project former Mosquito Control chemical storage area. The specific property is located at the 5224 block of College Road. The parcel is located within Section 34 of Township 67S, Range 25E, Monroe County, Stock Island, Key West, Florida. The entire project comprises a total area of +/- 2.66 acres and the former Mosquito Control property is 0.8 acres in size. The proposed College Road redevelopment is located approximately 3 miles east of the City of Key West, approximately 350 feet east of the Cow Key Channel and 1200 feet northwest of the College Road and Overseas Highway intersection in Monroe County, Florida.

It is our understanding that the subject property is proposed for redevelopment by the Florida Housing Authority under the College Road Affordable Housing Project. Based on the review of the conceptual site plan, the proposed development will consist of (3) raised three story multi-family residential structures with a total of 104 units. The conceptual plans included proposed: drainage, landscape, paved travel ways, parking, elevations, floor plans and various other pre-design components. A Phase I and II ESA was requested by the City to fulfill the requirements of the Florida Housing Finance Corporation (Verification of Environmental Safety Phase I and Phase II Certifications).

### ***BACKGROUND***

Recently, a Phase I ESA completed by Tetra Tech and submitted to the City on November 8, 2019, identified (2) Recognized Environmental Conditions (RECs). Based on our preliminary findings, Tetra Tech initially determined two areas of potential concern associated with the former Mosquito Control Parcel (5224 College Road) former pesticide chemical storage area and former gasoline and diesel fuel ASTs, which warranted further evaluation: A Phase II ESA was

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subsequently authorized by the City. Tetra Tech submitted a Phase II ESA on December 2, 2019, the results are briefly discussed in the following section.

### ***PHASE II ESA RESULTS***

The soil samples collected from the former chemical storage area soil borings reported levels above the Chapter 62-777, F.A.C. Table II, Soil Cleanup Target Levels (SCTLs) for organochlorine pesticides in 2 of the 7 soil samples.

The groundwater samples collected from the existing on-site permanent monitor wells reported levels above the Chapter 62-777, F.A.C. Table I, Groundwater Cleanup Target Levels in 2 of the 9 groundwater samples. The exceedances were for organochlorine pesticides near the former chemical storage area and for petroleum-based compounds in the area downgradient of the former ASTs.

Tetra Tech recommended the development and implementation of a Site Assessment (SA) for the reported on-site soil and groundwater organochlorine pesticide exceedances associated with the former Mosquito Control chemical storage and washdown area pursuant to Chapter 62-780.600, F.A.C. Additionally, as part of this assessment the reported downgradient Cumene – (Isopropylbenzene) GCTL exceedance will be investigated with additional soil and groundwater samples.

## **2. SITE ASSESSMENT OBJECTIVES AND SCOPE OF WORK**

### ***CONSTITUENTS OF INTEREST***

Based on available data, this site appears to have been an active Mosquito Control facility intermittently operating for the past 60 years (~1959 – 2019). The constituents of interest (COIs) for this facility are the organochlorine pesticides, and Cumene.

- 4,4-DDT
- 4,4-DDD
- 4,4-DDE
- Isopropylbenzene (Cumene)

### ***MEDIA SPECIFIC ASSESSMENT***

This section presents the field program, which will be used to assess former Mosquito Control facility. A site assessment will be performed to determine the horizontal and vertical extent of the COIs at the site. The activities described in this section comprise the field activities and include the following:

- Existing monitor wells will be gauged and redeveloped to ensure representative groundwater analytical sampling.
- The installation of a lithologic soil boring to depth of approximately 30 feet to understand the surficial geology at the site.
- The advancement of (12) soil borings for the collection of soil samples. The collection of (10) soil samples around and beneath the former Chemical Storage Building and (2) soil borings adjacent to MW-4 to delineate the documented SCTL and GCTL exceedances. The soil

samples will be analyzed for EPA 8081 for Organochlorine Pesticides and EPA 8260 for Volatile Organic Compounds.

- The installation of up to five monitoring wells. The well installation method will be via direct-push. The wells will be installed with 1" outer diameter PVC casing. For estimating purposes, we will assume 4 water-table monitoring wells and one vertical extent monitoring well. Additionally, a shallow monitoring well will be installed inside the facility at the location of the former chemical storage area and outside the facility in the former washdown area.
- Collection of groundwater samples from select existing and newly installed monitoring wells for EPA Method 8260 for VOCs and EPA Method 8081 for Organochlorine Pesticides.
- The containerization and characterization of investigative derived wastes, i.e., soil cuttings, purge waters, and personal protective equipment (PPE).

Field investigation activities will be conducted in accordance with the FDEP Standard Operating Procedures (SOPs)(FDEP 2017). SOPs will be adhered to in the collection of samples, duplicates, and equipment blanks. The laboratory analyses will be performed by a National Environmental Laboratory Accreditation Conference (NELAC) certified laboratory.

A Health and Safety Plan (HASP) will be prepared in accordance with Occupational Safety and Health Administration (OSHA) regulations set forth in 29 CFR 1910.120 (Hazardous Waste Operations and Emergency Response Plan) and submitted to the City. The HASP will address the hazards associated with the site groundwater and soil sampling services to be performed at the former Mosquito Control facility. The protocol described in the HASP is established based on an analysis of potential hazards at the site, with personnel protection measures chosen based upon identified risks. The HASP shall be read by all personnel before commencing operations and shall be followed by contractors, subcontractors, and visitors.

#### ***UTILITY CLEARANCE***

Tetra Tech or its contractor will contact the Sunshine State One-Call Center in order to locate on-site utilities. Care will be taken to avoid overhead power lines. Prior to advancing a direct-push boring the first four feet of the boring will be hand cleared to verify the absence of underground utilities.

#### ***SOIL AND GROUNDWATER SAMPLING***

A direct-push/ auger rig will be used during the site assessment to assess potential soil and groundwater contamination at the site. Direct-push sampling will be conducted at various locations across the site. Proposed boring locations are shown on Figure 1. These locations will be revised as necessary in the field (to avoid utility conflicts), and with the City's concurrence. Off-site direct-push sampling will only be conducted if off-site permission can be readily secured from the adjacent property owners and the additional data is required to complete the SA.

Soil samples from inside the former chemical storage area will also be analyzed by the zero headspace Synthetic Precipitation Leaching Procedure (SPLP), EPA Method 1312/8081. In addition, a monitor well will be placed in the above-mentioned soil boring for the collection of groundwater samples.

Additional monitor wells will be installed with the direct-push rig in the upgradient and downgradient directions of the documented pesticide exceedances.

### **PROFESSIONAL SURVEY**

A specific purpose survey will be performed at the former Mosquito Control facility. The survey will include latitude and longitude coordinates for the direct-push points and permanent monitor wells along with ground surface or top of casing elevations. In addition, the survey will include the location of pertinent aboveground features; however, the survey will not include a boundary survey.

## **2. REPORTING**

The deliverable for this project will be a Site Assessment Report (SAR). An outline is shown below:

- Table of Contents
- Certification
- 1.0 Introduction
- 2.0 Site Description and History
  - 2.1 Site Location, Land Use, and Utilities
  - 2.2 Topography and Drainage
  - 2.3 Potable Water Supply Wells
  - 2.4 Operational History
  - 2.5 Previous Investigations
- 3.0 Geology and Hydrogeology
- 4.0 Site Characterization
- 5.0 QA/QC Laboratory Data Review
- 6.0 Conclusion
- 7.0 Recommendations
- References
- Tables
- Figures
- Appendices

The text of the report will be formatted in Microsoft Word® with the tables in Microsoft Excel.® Individual site figures, in AutoCAD, depicting the relative location of each sampling point will be prepared along with a groundwater flow map and a summation of analytical detections above standards. A hard copy and an electronic copy of the report will be submitted to the FDEP.

## **PROJECT SCHEDULE, FEE, AND LIMITATIONS**

It is prepared to begin implementation of this project immediately upon receipt of authorization to proceed from the City. After receipt of authorization to proceed from the City, the SAR will be submitted to the City within 30 business days of completion of field activities which includes time allotted for laboratory turn-around.

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For this proposal, we have assumed that one electronic and one hard copy of the report will be prepared and submitted to the FDEP.

It proposes to perform the scope of work described herein on lump sum basis in accordance with the terms and conditions of our current MSA with the City (Resolution ESA 14-359). The proposed cost to complete the SAR is \$49,991. A summary breakdown of our cost estimate to complete the scope of work is attached. For this proposal we have selected Pace Analytical Laboratories as the primary analytical laboratory. We have selected GFA as the drilling contractor.

It will keep the City abreast of anticipated changes, if any that may occur. We will not initiate additional work without your prior authorization. We appreciate the opportunity to submit this proposal and look forward to working with the City on this project. If you have any questions or require additional information, please feel free to contact the undersigned at your earliest convenience.

Respectfully Submitted,  
**Tetra Tech, Inc.**



Dave Frodsham, P.E.  
Project Manager

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City of Key West		Task 1		Task 2		Task 3		Total			
Pesticide SAR		SAR Work Plan		Performance of Field Investigation		SAR Data Analysis, Interpretation and Report Preparation					
NAME	TITLE	UNIT RATE	QTY	PRICE	QTY	PRICE	QTY	PRICE	QTY	PRICE	
<b>Teche Tech Staff</b>											
S. Duellette	Sr Technical Professional I	\$ 137.00	3.0	\$ 411	85.0	\$ 11,645	53.0	\$ 7,261	141.0	\$ 19,317	
J. McGovern	Sr Technical Professional III	\$ 195.00	-	\$ -	4.0	\$ 780	8.0	\$ 1,560	12.0	\$ 2,340	
E. Walton	Technical Professional II	\$ 126.00	-	\$ -	-	\$ -	8.0	\$ 1,008	8.0	\$ 1,008	
S. McGhee	Sr. Project Manager	\$ 210.00	-	\$ -	-	\$ -	-	\$ -	-	\$ -	
F. Martinez	Technical Professional I	\$ 104.00	-	\$ -	-	\$ -	20.0	\$ 2,080	20.0	\$ 2,080	
A. McDonald	Sr Technical Professional II	\$ 173.00	-	\$ -	-	\$ -	-	\$ -	-	\$ -	
D. Frodham	Sr Technical Professional II	\$ 173.00	-	\$ -	-	\$ -	4.0	\$ 692	4.0	\$ 692	
L. Soberg	Technician	\$ 76.00	2.0	\$ 152	3.0	\$ 228	2.0	\$ 152	5.0	\$ 380	
B. Proctor	Sr. Division Manager	\$ 235.00	-	\$ -	-	\$ -	1.0	\$ 235	1.0	\$ 235	
0		\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	
<b>Total Labor Cost</b>			5.0	\$ 563	90.0	\$ 12,501	94.0	\$ 12,736	189.0	\$ 25,738	
<b>External Subcontractor</b>											
EDR Report		\$ 490.00	-	\$ -	-	\$ -	-	\$ -	-	\$ -	
Laboratory		\$ 8,000.00	-	\$ -	1.0	\$ 8,000	-	\$ -	1.0	\$ 8,000	
Driller		\$ 10,500.00	-	\$ -	1.0	\$ 10,500	-	\$ -	1.0	\$ 10,500	
ISW		\$ 1,500.00	-	\$ -	1.0	\$ 1,500	-	\$ -	1.0	\$ 1,500	
Surveyor		\$ 3,000.00	-	\$ -	1.0	\$ 3,000	-	\$ -	1.0	\$ 3,000	
<b>Total External Subcontractor</b>			-	\$ -	5.0	\$ 21,000	-	\$ -	5.0	\$ 21,000	
<b>Travel</b>											
R/T Airfare		\$ 500.00	-	\$ -	-	\$ -	-	\$ -	-	\$ -	
Mileage		\$ 0.58	-	\$ -	-	\$ -	-	\$ -	-	\$ -	
Rental Car w/Pool		\$ 75.00	-	\$ -	6.0	\$ 450	-	\$ -	6.0	\$ 450	
Misc. Travel Costs (gas, parking, tolls)		\$ 50.00	-	\$ -	5.0	\$ 250	-	\$ -	5.0	\$ 250	
Lodging		\$ 911.00	-	\$ -	5.0	\$ 4,555	-	\$ -	5.0	\$ 4,555	
Per Diem		\$ 89.00	-	\$ -	5.0	\$ 445	-	\$ -	5.0	\$ 445	
<b>Total Travel Costs</b>			-	\$ -	21.0	\$ 5,600	-	\$ -	21.0	\$ 5,600	
<b>Other Direct Costs / Rental Equipment/Laboratory</b>											
Shipping		\$ 65.00	-	\$ -	-	\$ -	1.0	\$ 65	1.0	\$ 65	
Reproduction - B&W		\$ 0.08	-	\$ -	-	\$ -	-	\$ -	-	\$ -	
Reproduction - Color		\$ 0.43	-	\$ -	-	\$ -	300.0	\$ 129	300.0	\$ 129	
Misc. Equip & Supplies		\$ 300.00	-	\$ -	4.0	\$ 400	-	\$ -	4.0	\$ 400	
<b>Total Other Direct Costs</b>			-	\$ -	4.0	\$ 400	301.0	\$ 194	305.0	\$ 494	
<b>Grand Total</b>				5.0	\$ 563	95.0	\$ 12,901	95.0	\$ 12,930	195.0	\$ 26,132

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College Road Site Assessment  
CONTRACT OR PROJECT NAME

David Frodsham  
By (PRINT NAME)

Project Manager  
TITLE

David Frodsham 12/5/19  
SIGNATURE DATE

Accepted By:

Quinn Fackel  
CLIENT

Patti McLaughlin  
BY (PRINT NAME)

Assistant City Manager  
TITLE

12/6/2019  
SIGNATURE DATE