# PHASE I
# ENVIRONMENTAL SITE ASSESSMENT

## Improvements to PR-2, PR-2R & San Juan St.
## La Vita Intersection, Km. 153.90
## Mayaguez Pueblo Ward
## Mayaguez, PR 00681 & 00682

**Prepared for:**

**Alpha Engineering Group, PSC**
**Jose A. Battlle & Asociados, CSP**
**ACT**

AUTORIDAD DE CARRETERAS Y TRANSPORTACION

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RAF Environmental Consultants

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## EXECUTIVE SUMMARY

RAF Environmental Consultants has prepared this Phase I Environmental Site Assessment (ESA) specifically for Alpha Engineering Group, PSC and Puerto Rico Highway and Transportation Authority for the subject property which consists of an improvement to PR-2 and PR-2R, University of Puerto Rico-Mayaguez Campus, San Juan Street, La Vita Intersection, at Kilometer 153.9, inside the Mayaguez Pueblo Ward, inside the Municipality of Mayaguez, Puerto Rico. We reviewed the existing project area and the six (6) alternatives.

This Phase I ESA summarizes the information obtained during our site visit, records and database review. The objective of this Phase I ESA was to identify “recognized environmental conditions” (REC) of the subject property, representing “all appropriate inquiries” (AAI) satisfying one of the key requirements of the Superfund innocent landowner defense, contiguous property owner defense, or bona fide prospective purchaser defense.

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527 of the Subject Property. Any data gaps are described in Section 1.3 of this report. Any exceptions to, or limitations from, this practice are described in Section 1.4 of this report.

No historical REC’s or REC’s were identified on the subject property. The only potential problems were various garbage, construction and accident debris and waste observed along the boundaries of the proposed project. This issue must be addressed, where debris and waste materials are removed, as part of the implementation of the proposed project. No significant potential environmental problems were identified in the immediately surrounding properties that would directly affect the subject property.

Therefore, based on the information obtained during this Phase I ESA and the existing laws and regulations, the potential environmental risk and liability for the subject property is relatively low as long as the above recommendations are implemented.

## 1.0 INTRODUCTION

Alpha Engineering Group, PSC (AEG) and José A. Battle & Associates, requested the preparation of this Phase I Environmental Site Assessment (Phase I ESA) as part of the Puerto Rico Highway Transportation and Authority (PRHTA), that was completed for the proposed improvements to PR-2, PR-2R , San Juan Street in from the University of Puerto Rico- Mayaguez Campus (RUM), which is the subject property located Mayaguez Pueblo Ward, in the Municipality of Mayaguez, Puerto Rico (**Appendix 1, Figure 1)**.

The subject property is known as the PR-2, PR-2R Improvement Project that includes the La Vita Intersection in front of UPR-RUM. Residential, Commercial, Industrial and Public Use facilities are found along the route of proposed improvements. RAF Environmental Consultants reviewed the existing project area and the six (6) alternatives.

RAF Environmental Consultants conducted a database search, which included a review of available information from the Puerto Rico Planning Board (PRPB) and United States Environmental Protection Agency (U.S. EPA) databases, in addition to the Environmental Data Resources (EDR) database.

This Phase I ESA was completed for the subject property and conducted in accordance with our proposal approved on June 7, 2017.

This report contains a description of the Scope of Work (SOW) (**Section 1**), Site Location (**Sections 2** and **3**), followed by a Summary of Findings **(Section 4)** and Conclusions and Recommendations, presented in **Section 5**.

The purpose of completing this Phase I ESA was to identify “recognized environmental conditions” (REC’s) of the subject property, representing “all appropriate inquiries” (AAI), satisfying one of the key requirements of the Superfund innocent landowner, contiguous property owner, or bona fide prospective purchaser defenses, collectively known as the Landowner Liability Protections (LLP’s) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) and other amendments.

Recognized environmental conditions (REC's) are defined as the presence or likely presence of any hazardous substance or petroleum products in, on, or at a property:

(1) Due to release to the environment;

(2) Under conditions indicative of a release to the environment; or

(3) Under conditions that pose a material threat of a future release to the environment.

This report was prepared in accordance with the American Society of Testing and Materials (ASTM) E 1527-13 standards.

This Phase I ESA was conducted by environmental scientists and engineers properly trained in completing environmental assessments. Their qualifications exceed the ASTM regulatory standards for Environmental Professionals. Results of this Phase I ESA are based on the information and data obtained during July 2017. This update includes information from March 2018.

### 1.1 Scope of Work (SOW)

The SOW for this Phase I ESA included the completion of a visual survey and checklist to identify any obvious signs of contamination and obtain a general characterization of the property including, but not limited to:

- Above and underground storage tanks (AST's & UST's);
- Hazardous substances including stained soil or stressed vegetation;
- Storm water, drinking water, and sanitary water systems;
- Landfills in the area;
- Polychlorinated biphenyl's (PCB's);
- Pits, sumps, drains or catch basins;
- Presence of other environmental conditions of nearby properties that may affect the site or use of the subject property; and
- Evidence of solid waste disposal at the site, and adjacent properties.

In addition, this Phase I ESA included a review of available records, of historical aerial photographs and maps, identifying past and current uses, as well as conditions of the subject

property and the immediately surrounding industries generally within a one (1)-mile radius of the subject property, in accordance with ASTM Standards.

RAF Environmental Consultants conducted the database search using Environmental Data Resources (EDR) Radius Map™ with GeoCheck® System (**Appendix 2**). In addition, Puerto Rico Planning Board (PRPB), United States Environmental Protection (U.S. EPA) and Puerto Rico Environmental Quality Board (EQB) Underground Injection Control (UIC), Underground Storage Tank (UST) and Leaking Underground Storage Tank (LUST) databases were reviewed to crosscheck the EDR Database Report (**Appendix 3**).

### 1.2 Assumptions

This Phase I ESA did not include any intrusive testing or other investigation not included in our approved SOW.

### 1.3 Data Gaps

One data gap was that, as of the date of the Phase I ESA, we have not received an agency response to our information inquiry. An additional data gap was that no in-depth or detailed investigation was completed of commercial and industrial properties surrounding the subject property.

No other significant gaps or omissions were encountered for the completion of this report.

According to EPA's AAI rule, data gaps occur when the Environmental Professional is unable to obtain information required, despite good faith efforts to gather such information. Data failure, which is a type of a data gap, occurs when all of the standard historical sources that are reasonably ascertainable and likely to be useful have been reviewed, but have not been conclusive enough to meet the objective of the EPA's AAI rule.

When data gaps are encountered, the environmental professional must identify the data gap, identify the sources of information used to address the data gap, comment on the significance of the data gap, and form an opinion about the impact of the data gap.

RAF Environmental Consultants believes that the data gaps and/or data failures, if encountered during this Phase I ESA, did not significantly impede our ability to adequately assess the current condition and use of the subject property, historical land uses at the subject property, past and present uses of adjoining properties, and their possible environmental impact on the subject property.

### 1.4 Limitations and Exceptions

The assessment procedure was based on the client's agreement in a level of investigation considered to be prudent from a risk management philosophy and guided by common sense, professional judgment, and evaluation techniques being developed and used by governmental agencies for the investigation of properties subject to possible contamination. This Phase I ESA Scope includes conclusions and recommendations to assist the client in making informed business decisions which is an addition to the ASTM Standard.

Therefore, the findings, conclusions, and recommendations presented herein are based solely on the scope of work previously described and information gathered. Incomplete or outstanding information identified throughout the body of this report is considered a limitation to the assessment. Limitations to the assessment also include weather conditions, vegetation cover, parked cars, trucks, dumpsters, and anything limiting visual observation of or physical access to the subject property and adjacent properties.

No environmental assessment can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. Performance of the ASTM practice is intended to reduce, but not eliminate, uncertainly regarding the potential for RECs in connection with a property. In addition, the ASTM practice recognizes reasonable limits of time and cost.

Appropriate inquiry does not mean an exhaustive assessment of a clean property. There is a point at which the cost of information obtained or the time required to gather it outweighs the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions. One of the purposes of this practice is to identify a balance

between the competing goals of limiting the costs and time demands inherent in performing an environmental assessment and reducing uncertainty about unknown conditions resulting from additional information.

All findings, conclusions, and recommendations stated in this report are based upon facts, circumstances, and industry-accepted procedures for such services as they existed at the time this report was prepared (i.e. Federal, state, and local laws, rules, regulations, market conditions, economic conditions, and political climate).

All findings, conclusions, and recommendations stated in this report are based on the data and information provided, and observations and conditions that existed on the date and time of the property site visit.

Observations and conclusions presented are not scientific certainties, but are solely professional opinions based upon the information available to us which may be incomplete or inaccurate. The services provided herein are in no way intended to be legal advice and should not be relied upon in any way for legal interpretations.

### 1.5 Valuation Reduction for Environmental Issues

No significant reduction in the purchase price to value equation was stated by the client. RAF Environmental Consultants makes no representation concerning the legal significance of its findings or the value of the property investigated.

### 1.6 User Reliance

No third party is entitled to rely upon any information or opinions contained in this report except as designated in writing by RAF Environmental Consultants, AEG, José A. Battle & Associates, or PRHTA, however, such reliance is subject to the same limitations and conditions expressed in **Section 1.4** above.

# 2.0 SITE LOCATION

## 2.1 Location and Description

The subject property consists of a portion of highway PR-2 from approximately Km. 152 to Km. 154 which passes the Castillo Condominium, the Mayaguez Resort and Casino, University Plaza and Mayaguez Terrace, UPR-RUM, and The Mayaguez Town Center, ending at *Compañia Cerveceria de Puerto Rio* and the bridge at the *Rio Yaguez*. The majority of the subject property, PR-2 is a four (4) lane "north-south" highway, located in the Municipality of Mayaguez, Puerto Rico (**Appendix 1, Figure 1**). The alternate name for this highway is the Eugenio Mario de Hostos Avenue (Ave.).

According to the PRPB and the Municipality Zoning Maps of Mayaguez the subject property is classified as UP or Public Use (see **Appendix 1, Figure 2**).

There have been six (6) alternatives considered for this project, and we have included **Figure 3**, which illustrates Alternative Six (6) of the project layout. The preferred Alternative Six (6) consists in the development of two (2) overpass bridges to be located over the existing PR-2, in order to eliminate traffic signals in two (2) of the major intersections.

## 2.2 Adjacent Properties

Generally speaking, since this the subject property consists of PR-2, a primary road, and portions of various intersections and bridges, the subject property is bounded to the south by the *Rio Yaguez*.

The subject property is bordered to the north-east by: UPR-RUM, Mayaguez Terrace, PR-104, and the Mayaguez Resort and Casino PR-102.

The subject property is bounded to the north by: Condominium El Castillo and Victory Super Station-Mayaguez Gulf Service Station (SS).

The subject property is bounded to the south-west by: PR-102, Residence Mar y Sol, University Plaza, and the Dr. Pedro Perera Fajardo Vocational School.

The subject property is bounded to the south-east by: Mayaguez Town Center, Puma SS, and the *Compañia Cerveceria de Puerto Rico*.

**Table 2.2 below** contains a list of the adjacent properties.

**Table 2.2 – Adjacent Properties**

| DIRECTION | ADJACENT PROPERTIES |
|---|---|
| North-east | UPR-RUM, PR-104, Mayaguez Terrace, Mayaguez Resort & Casino |
| South-west | PR-102, Res. May & Sol, University Plaza, Dr. Pedro Perera Fajardo Vocational School |
| South | *Rio Yaguez* |
| South-east | Mayaguez Town Center, Puma SS, *Compañia Cerveceria de PR* |
| North | Condo. El Castillo; & Victory Super Station-Mayaguez Gulf SS |

## 3.0 SITE DESCRIPTION

This section describes the physical attributes and history of the subject property evaluated in this Phase I ESA.

### 3.1 Site Setting

It is understood that the subject property has been used in the past and is currently used for public use purposes, as a main road that provides direct access to the UPR-RUM and the Mayaguez City Center.

The topography of the site goes from a higher elevation in the north, north-west, to a lower elevation towards the south, south east. The existing elevation of the subject property ranges from 78 feet (24 meters), above mean sea level (msl) in the far northern portion, the lowest elevation is by the center of Mayaguez Terrace from between 10 to 13 feet (3-4 meters) msl to the southern portion which included the bridge at the *Rio Yaguez* which is about 20 to 23 feet (6-7 meters) above msl.

The center of the subject property, which is at the intersection in front of the UPR-RUM, has been identified with Latitude of 18° 12' 41.13" N and a Longitude of 67° 08" 44.63" W.

### 3.2 Historical Land Use

The site history evaluation was based on the following information: historical photographs from the Soil Survey of the Mayaguez Area of Western Puerto Rico, U.S. EPA, United States Geological Survey (USGS), PRPB and Puerto Rico Environmental Quality Board (EQB); Federal Emergency Management Agency (FEMA) databases, historical photos, other available information, site photographs, and a physical description of the subject property, which were gathered during our site visit and database searches.

### 3.3 Historical Aerial Photographs

The following photographs and maps span approximately 59 years. The selected aerial photographs **(Appendix 3, Figures 4 to 9)** for this report range from 1958 to 2017. All photographs and figures are oriented with north at the top, except where indicated.

**Figure 4** from 1958 shows a strip of land in the process of being prepared for the PR-2 road. UPR-RUM and Mayaguez Terrace can be clearly seen. The *Rio Yaguez* can be seen at the bottom of the photograph.

The Mayaguez city center, is located south, south-west of the subject property.

**Figure 5** from 1977 shows PR-2, the Mar & Sol Public Housing Project north-west of Mayaguez Terrace can be seen along with a new urbanization north of Mayaguez Terrace, called *Mansiones de España*. There are earth-movement activities behind or east of Mayaguez Terrace, which is believed to be the expansion of UPR-RUM. It appears that the Mayaguez Hilton (known later as the Mayaguez Resort & Casino) along PR-104, and the Mayaguez Shopping Center, between PR-2 and PR-2R, have been constructed.

**Figure 6** from 1983, shows clearing, earth-movement and small developments along PR-2. The expansion of UPR-RUM behind Mayaguez Terrace appears to be completed along with an athletic field. No other significant changes along the subject property could be identified.

**Figure 7** a 1993 aerial photograph from Google Earth, illustrates the subject property. It appears that the hardware store, *Ferreteria JJ Martinez Ginorio* can be seen immediately south-east of PR-2 and Mayaguez Terrace. No other significant changes can be identified.

**Figure 8** from 2006, shows the University Plaza south of the hardware store and south-west of Mayaguez Terrace. The Walgreen's can be clearly seen with the square white roof. The *Quebrada del Oro* borders the southern portion of University Plaza.

The expansion of some of the Mayaguez Resort & Casino can be seen in this photograph.

**Figure 9** consists of three (3) photographs taken in 2010 and obtained from PRPB, which shows the subject property. The PR-3108, including the intersection with PR-2 and PR-104, located immediately north-west of Mayaguez Terrace and immediately south-east of the Mayaguez Resort & Casino is under construction. It also appears that two (2) additional free standing restaurants, including Popeye's and El Meson, can be seen on the far south-east

corner of the University Plaza, immediately south-west of PR-2.

**Figure 10** from January 2017 shows that the construction of PR-3108 is complete. This photograph generally shows how PR-2, the subject property, looks today.

### 3.4 Soils

The U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS), has classified the soils on the subject property, as seen in **Figure 11**, and detailed below:

Alluvial Land (An), found mainly in the area west of Mayaguez Terrace is characterized as found in lagoon like positions and depressions on the flood plains of streams and rivers. The water table is expected to be at or near the surface during most of the year.

Consumo Clay (CoE), found mainly in the areas north of Mayaguez Terrace and PR-102 and PR-104, typically has between 20 to 40% slopes. These soils are strongly acidic and moderately permeable, formed in residual material weathered from volcanic rock and tuffaceous mudstone. This soil is found on side slopes and ridgetops of the volcanic uplands. The surface layer is reddish brown clay eight (8) to 10 inches thick and the subsoil layer is red clay down 10 to 16 inches thick.

Level Clayey Land (Lc) - found mainly in the area between *Rio Yaguez* and *Quebrada del Oro*, including portions inside the Mayaguez Town Center and UPR-RUM. This soil has been disturbed by earthmoving equipment that is not possible to recognize the original soil.

Leveled land, frequently flooded as identified by “Lf” is seen in the Mayaguez Terrace area and a small portion by the *Rio Yaguez*. This soil is identified as found on flood plains along rivers, however, the original soil cannot be recognized.

A Soil Survey, included in **Appendix 7**, includes additional information on soils and groundwater depth inside the subject property. No potential hazardous contaminants were identified in the six (6) borings that were completed on the subject property.

### 3.5 Geology

The 1986 USGS Map of the Mayaguez and Rosario Quadrangles, **Figure 12,** has classified the geology on the subject property as the Alluvium (Qal) and Yauco Formation (Ky), as follows:

Mostly in the north and some south-west, the Yauco Formation (Fm.) is a Cretaceous, dark-bluish-gray to dark-gray, to dark-greenish-gray, interbedded, calcareous, volcaniclastic sandstone, siltstone, mudstone, claystone, limestone, and subordinate breccia and conglomerate, characteristically thin- to medium-bedded and fine- to medium-grained. The Yauco Fm. characteristically weathers to a light-orange-brown saprolite that preserves the texture and structure of the original rock. A minimum thickness of 4,265 feet (± 1,300 meters) is present in the mapped area.

Alluvium (Qal) Holocene, consisting of poorly to moderately sorted and moderately to well-bedded sand, silt, and cobble or boulder gravel, chiefly along streams; includes unsorted rock-fall and landslide debris at foot of steep slopes.

Swamp deposits (Qs) can be seen south-west of the subject property, as part of the *Quebrada del Oro*.

### 3.6 Flood Zone

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) #C0985J and the National Flood Hazard Layer (NFHL), the subject property is located in an un-shaded Zone X which indicates minimal risk areas outside the 1% and 0.2% annual-

chance floodplains. Therefore, as illustrated on **Figure 13**, the subject property is outside both the 100 year and 500 year flood zones and outside the regulated floodway of the *Rio Yaguez*.

This flood map was jointly produced by FEMA and the PRPB.

### 3.7 Groundwater Wells

Groundwater monitoring wells were identified within a one (1)-mile radius from the subject property and are detailed on **Table 3.7** below.

**TABLE 3.7 Groundwater Wells**

| MAP ID | WELL | LATITUDE | LONGITUDE |
|---|---|---|---|
| 1. | AIND 1 | 18° 12’ 40” | 067° 08’ 48” |
| 2. | REAL | 18° 12’ 40” | 067° 08’ 41” |
| 3. | AIND 2 | 18° 12’ 34” | 067° 08’ 45” |
| A4. | CIND 4 | 18° 12’ 32” | 067° 08’ 37” |
| A5. | CIND 3 | 18° 12’ 32” | 067° 08’ 35” |
| A6. | CIND 1 | 18° 12’ 33” | 067° 08’ 33” |
| B7. | Valdez 1 | 18° 12’ 33” | 067° 08’ 32” |
| 8. | UPR-CAAM | 18° 12’ 41” | 067° 08’ 26” |
| B9. | CIND 2 | 18° 12’ 31” | 067° 08’ 31” |
| C10. | CE-RUM1 | 18° 12’ 59” | 067° 08’ 22” |
| 11. | RIV | 18° 12’ 23” | 067° 08’ 51” |
| D12. | ARCELAY 1 | 18° 12’ 26” | 067° 08’ 29” |

| MAP ID | WELL | LATITUDE | LONGITUDE |
|---|---|---|---|
| D13. | ARCELAY 2 | 18° 12’ 26” | 067° 08’ 28” |
| E14. | NADAL 1 | 18° 12’ 20” | 067° 08’ 45” |
| C15. | CE-RUM2 (Obs.) | 18° 13’ 01” | 067° 08’ 19” |
| E16. | NADAL 2 | 18° 12’ 19” | 067° 08’ 46” |
| 17. | ROD 2 | 18° 12’ 15” | 067° 08’ 45” |
| 18. | Torres | 18° 12’ 15” | 067° 08’ 40” |
| 19. | CDPER | 18° 12’ 17” | 067° 08’ 24” |
| F20. | MRES | 18° 13’ 17” | 067° 09’ 14” |
| 21. | MSAN | 18° 12’ 10” | 067° 08’ 35” |
| 22. | HLPAL | 18° 12’ 18” | 067° 08’ 17” |
| 23. | ARBONA | 18° 12’ 11” | 067° 08’ 28” |
| F24. | Valdez 2 | 18° 13’ 20” | 067° 09’ 15” |
| 25. | ZOO | 18° 13’ 13” | 067° 07’ 58” |

No public water supply (PWS) systems were found within a one (1)-mile radius of the subject property.

In September of 1958 the groundwater level was measured to be about two (2) feet below the ground surface (bgs) at REAL Well (2), located about 1/8$^{th}$ mile south, south-east of the subject property. This well was drilled to 130 feet; with the well going to a depth of 115 feet bgs.

CIND 4 Well (A4) was measured in October of 2002 with a recorded depth of 5.83 feet bgs. This well was built in September of 1954 is 100 feet deep.

A Soil Survey completed in 2017, included in **Appendix 7**, includes additional data on groundwater depth inside the subject property. The depth of groundwater from the six (6) borings that were completed ranged between 13 to 15 feet bgs.

## 4.0 SITE INSPECTIONS, AND SUMMARY OF FINDINGS

Presented in this section is a summary of findings related to information reviewed concerning the subject property and the immediately surrounding properties that were evaluated. This included: a site visit to assess the condition of the subject property and to note obvious signs of contamination, interview, hazardous substances management, and/or potential environmental problems at the subject property.

### 4.1 Site Visit and Photographs

RAF Environmental Consultants conducted a site visit on the subject property on July 11th, 2017. One of the objectives of the site visit was to observe current on-site conditions and to obtain a representative understanding of the subject property and surrounding area.

During the site visit, photographs were taken to document the existing conditions of the subject property. The following selected site photographs, included in **Appendix 5**, help illustrate the conditions found on the subject property and surrounding areas.

The Phase I ESA Checklist found in **Appendix 6** of this report was completed based on the review of available information, database searches, and site visit.

An interview with the owner's representative was completed, which is discussed in **Section 4.3.**

#### 4.1.1 Aboveground and Underground Storage Tanks

No underground storage tanks (UST's) were observed as part of the site visit to the subject property. However, there are several Service Stations (SS) with UST's, and several emergency generators with small, aboveground storage tank (AST) that could be considered "day tanks" located in the immediately vicinity of the subject property. No significant problems were identified with these UST's or AST's.

### 4.1.2 Chemicals

No chemicals were seen on the subject property. Some of the surrounding facilities may handle and or manage various products or chemicals. This included various products typically found for sale in various commercial stores, including paints, petroleum hydrocarbons, adhesives, acids, solvents, cleaning supplies and pesticides. The various fast food restaurants in the surrounding area, are expected to have grease traps. No apparent problems were identified with chemicals during our site visit.

### 4.1.3 Polychlorinated Biphenyls (PCBs)

Several electrical transformers were seen behind stores or were pole mounted in the vicinity of the subject property during the site visit. We believe that the transformers were labeled as non-Polychlorinated Biphenyl's (PCB's). No problems or potential impacts to the subject property were identified during our site visit.

### 4.1.4 Hazardous Substances

As discussed in **Section 4.12** above, no potential evidence of hazardous substances was observed during the site visit. However, several areas in front of Mayaguez Terrace included garbage, waste and construction debris. This is discussed further in **Section 4.1.5**, below.

### 4.1.5 Solid Waste Disposal

The surrounding properties are provided with routine pick-up services from the Municipality of Mayaguez. However, we noticed several areas in front of Mayaguez Terrace where not all garbage, waste and construction debris is picked up by the Municipality. These various waste materials mentioned, may become part of the responsibility of the PRHTA to remove during the implementation of the PR-2 Improvements.

### 4.1.6 Landfills

No landfills were identified in a one (1)-mile radius from the subject site. However. The Mayaguez Landfill is located about 1.35 miles north-east of the subject property.

### 4.1.7 Pits, Sumps, or Catch Basins

No pits or sumps, were identified during the site visit. However, we did see various storm water catch basins and a storm water passage way under PR-2, specifically the *Quebrada del Oro* that comes from the UPR-RUM Campus.

### 4.1.8 Storm Water, Sanitary, or Drinking Water Systems

The various commercial, industrial and residential properties surrounding the subject property are connected to PRASA's water and sanitary systems. However, all storm water will flow towards the south-west, connecting with the *Quebrada del Oro* which passes under PR-2. These storm waters generally flow toward the south-west and eventually discharge into the Mayaguez Bay, about 0.80 mile west, north-west of the subject property. The southern extent of the subject property is bounded by the *Rio Yaguez* which also discharges storm water into the Mayaguez Bay.

### 4.1.9 Asbestos and Lead

Suspect asbestos containing materials (ACM) or Lead Based Paints (LBP) were not part of the scope of this Phase I ESA.

## 4.2 Information Review

RAF Environmental Consultants reviewed available information concerning the subject property and its immediate neighbors.

An interview was made using photographs that were taken of the subject property and its surroundings, which are documented in **Appendix 5**, Site Photographs.

An EDR Radius Map™ with GeoCheck® System was completed **(Appendix 2).** This database search was performed to identify the surrounding industries in accordance with ASTM potential hazardous facilities within a one (1)-mile radius, in accordance with ASTM Standards, Section 8.2.1. following standard search distances.

U.S. EPA Envirofact's and EnviroMapper databases **(Appendix 3)** were also reviewed to verify the EDR Report.

Portions of our site visit, interview, records review and database searches were included in the Phase I ESA Checklist (**Appendix 6**).

Potentially hazardous sites within a one (1)-mile radius of the subject property from the database searches are listed on **Table 4.2**, below. Sites located more than one (1) mile from the facility were not evaluated.

**Table 4.2 Surrounding Properties**

| # | FACILITY | DIRECTION | ID NUMBER |
|---|---|---|---|
| A1<br>A2 | UPR- Mayaguez (RUM)<br>#252 Alfonso Valdez Blvd. | Along subject property | SQG, ECHO ICIS<br>PRD 987 367 620<br>PRR 000 018 093<br>Active LUST 86-1989<br>PRR040010 |
| 3 | Esc. Sup. Vocational<br>Dr. Pedro Perera Fajardo<br>PR-2 & Lloren Torres St. | Along subject property | ICIS, FINDS, ECHO |
| 4 | Western Petroleum Enterprises Inc. PR-2 Interior | Along subject property | PRN 008 022 014<br>FINDS ECHO<br>Used Oil - CESQG |
| 5 | Fili Realty<br>PR-2 Marginal Road<br>#1114 Jose E. Arras St.<br>Mayaguez Terrace | Along subject property (across PR-2 from El Meson) | ICIS |
| A6A<br>7 | Mayaguez Shopping Center SE<br>PR-2R, #252 Post North | 0.044 miles SSE | PR0 000 967 851<br>PR0 000 969 519<br>ECHO |
| B8<br>B9 | Ex-Gulf #023<br>PUMA SS "To-Go"<br>(former Santa. Paula Oil)<br>PR-2R, #160 Post North | 0.047 miles SE | Active LUST 86-0254<br>Inactive- Used oil UST: permanently out-of-use |

| # | FACILITY | DIRECTION | ID NUMBER |
|---|---|---|---|
| 10 | Walgreens #374<br>#2097 Ave. Hostos<br>(PR-2 Marginal Road) | 0.103 miles NNW | PRR 000 012 351<br>LQG |
| 11 | Ex-Texaco SS #650<br>Antiguo Terminal De Mayaguez,<br>#81 Comercio St. | 0.205 miles WNW | PRR 000 007 872<br>UST 98-0104 |
| 12 | Cerveceria India<br>#100 Alfonso Valdez Blvd.<br>PR-2R, #32 Post Norte | 0.210 miles SE | PRD 090 096 769<br>PRC 200 400 182<br>Ammonia Release<br>UST 86-1895, TRI Nitric Acid 2015<br>NPDES to *Rio Yaguez* PR0001341 |
| C13<br>C14 | Ex-Gulf SS #055<br>#111 West McKinley St. | 0.224 miles S<br>(South of the *Rio Yaguez*) | Active LUST 86-0276 |
| D15 | Kmart #3882<br>PR-2, Km. 149.5 | 0.241 miles S<br>(South of the *Rio Yaguez*) | PRR 000 003 558<br>CESQG |
| D16 | Pep Boys #920<br>PR-2, Km. 149.5<br>Saba Wd. | 0.241 miles S<br>(South of the *Rio Yaguez*) | PRR 000 007 617 |
| 17 | Oil Energy Systems Inc.<br>PR-341, Km. 1.0, Jose Gonzalez Clemente Ave. | 0.243 miles NW | PRR 000 008 524 |
| 18 | Former All Star SS - Nexan Tire<br>Mayaguez Terrace<br>#1068 Jose E. Arras St.<br>PR-2 Marginal Rd. | Immediately SE | UST 91-0330 |
| 19 | Mar y Sol Public Housing<br>PR-102 INT. PR-2, Km. 151.5 | Immediately SW | PRR 000 014 886 |
| 20 | Victory Super Station<br>Mayaguez Gulf SS<br>PR-2, Km. 152 | Immediately N | UST 08-0007 |
| 21 | Total (Ex-Esso #375)<br>PR-2, Km. 150.9<br>Bo. Algarrobo | 0.12 miles N | Inactive LUST 97-0005 |
| 22 | PREPA Mayaguez Gas Plant<br>PR-341, Malecón | 0.21 miles W | PRD 987 379 856<br>PFE-TV-11960014 |
| 23 | A&B SS, All Star<br>(Ex Vistamar SS)<br>#247 Concordia St.<br>(near Port of Mayaguez) | 0.22 miles W | UST 91-0335 |

| # | FACILITY | DIRECTION | ID NUMBER |
|---|---|---|---|
| 24 | ACT<br>PR-102 (Jose Gonzalez Clemente Ave.) | 0.24 miles SW | PRR 000 019 216; |
| 25 | Total, Ex-Esso Std. Oil #302<br>#123 Comercio St. | 0.33 miles SW | PRR 000 014 308<br>Active LUST 86-1195 |
| 26 | Gabsi Inc.<br>#739 Los Ingenieros | 0.37 miles NW | PRR 000 010 892<br>PRR053268<br>Marine cargo |
| 27 | Rafael Vicente SS #616<br>#206 Comercio St.<br>Guanajibo Ward | 0.45 miles NW | Active LUST 86-1861<br>PRR 000 015 842<br>CESQG |
| 28 | PRASA Miradero Filter plant<br>PR-108, Km. 2.8 | 0.95 miles NW | PR0023990 |

**Appendix 4** contains copy of the information request letter submitted to the EQB. No response has been received as of the date of this assessment.

No significant findings were found during the database review of potential surrounding sites listed on **Table 4.2** above that would directly impact the subject property.

### 4.2.1 Property Liens and Use Limitations

No title search or property deed was available for review. We did review the existing topographic and utility survey, **Appendix 8**. Except for the *Quebrada del Oro* and standard PREPA, PRASA and PRHTA right-of-ways, no other right-of-way (ROW), liens, or use limitations were identified for the subject property.

### 4.2.2 Spill Reports

A review of the available information did not identify a report of a spill event being recorded for the subject property.

### 4.3 Interview

In accordance with Section 10 of the ASTM Standard whenever possible an interview should be completed to help gather information regarding the knowledge and history of the subject property. On July 21, 2017 an interview was completed.

The owner's representative, Eng. Edgardo Robles was interviewed. He is the manager of the environmental studies and has knowledge of the subject property for the past year.

Portions of our site visit, interview, records review and database searches were included in the Phase I ESA Checklist (**Appendix 6**).

## 5.0 CONCLUSIONS AND RECOMMENDATIONS SUMMARY

Presented in this section is an opinion and summary of findings relating to the information reviewed concerning the subject property, and the immediately surrounding properties that were evaluated for potential environmental problems. This included a site visit to assess the condition of the subject property and to note obvious signs of contamination or management of hazardous substances. In addition to the site visit, a records review, a database search, an interview and historical photographs were reviewed for the subject property. RAF Environmental Consultants reviewed the existing project area and the six (6) alternatives.

### 5.1 Conclusions

Results of the environmental database search showed some facilities that may potentially generate, manage, and/or treat hazardous substances within a one (1)-mile radius of the subject property. However, no significant potential environmental problems were identified on the subject property or a potential negative impact from the immediately surrounding properties.

No REC's were identified on the subject property. However, there were some areas of concern (AOC), which included the various garbage, construction debris, waste and automobile accident damage remaining on PR-2 and/or portions of its marginal roads, with the emphasis on the area in front of Mayaguez Terrace.

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527 of the subject property located in the Municipality of Mayaguez, Puerto Rico. Any exceptions to, or limitations from, this practice are described in **Section 1.4** of this report.

Therefore, based on the information obtained for this Phase I ESA, including information acquired from our record reviews, interview, aerial photographs, database searches and a review of existing laws and regulations, it was concluded that the potential environmental risk

and liability for use of this property is relatively low as long as our recommendations discussed in **Section 5.2**, below are immediately implemented.

## 5.2 Recommendations

Based on the information obtained for this Phase I ESA, as discussed in Section 5.1 Conclusions, except for the proper maintenance of the garbage, debris and waste materials found along PR-2 and its marginal roads, no other significant environmental risk or liability was discovered.

To reduce potential environmental risk and liability, the following are recommended to be immediately as soon as the project is initiated:

- Waste articles (i.e. construction debris, waste materials and garbage) across the subject property, be properly disposed of in accordance with applicable regulations and laws.

## 6.0 LIST OF PARTICIPATING ENVIRONMENTAL PROFESSIONALS

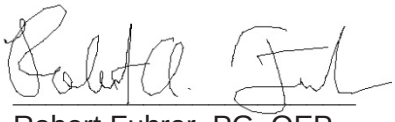
Listed below are the various environmental professionals who participated in this Phase I ESA.

- Robert Fuhrer, - QEP, PG, Project Manager
- Maria Elena Jimenez, - Environmental Scientist

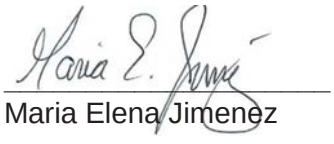
A listing of the credentials and qualifications of the above environmental professionals who participated in this Phase I ESA are found in **Appendix 9**.

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR, and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. Furthermore, we declare that the report is in substantial compliance with ASTM Standard Practice E1527-13 which the EPA has ruled meets the requirements of its all appropriate inquiries rule.

The signature of the Environmental Professionals who participated in the completion and review of this report are found below.



Robert Fuhrer, PG, QEP



Maria Elena Jimenez

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