U.S. Department of Housing and Urban Development
451 Seventh Street, SW
Washington, DC 20410
www.hud.gov

espanol.hud.gov

Environmental Review for Activity/Project that is Categorically Excluded Subject to Section 58.5

Pursuant to 24 CFR 58.35(a)

Project Information

Responsible Entity: Puerto Rico Department of Housing (PRDOH)

Grant Recipient (if different than Responsible Entity): same as above

PRDOH Project ID: PR-FER-00660

Project Name: Leonardo Estrada Ferrer Leonardo Estrada Ferrer

State/Local Identifier: Puerto Rico, San Germán

Preparer: Hannah Danek, Associate Project Manager

Certifying Officer Name and Title:
Aldo A. Rivera Vazquez, PE - Director, Permits and Environmental Compliance Division
Angel G. López Guzmán - Deputy Director, Permits and Environmental Compliance Division
Maria T. Torres-Bregón - Permits and Environmental Compliance Manager
Sally Z. Acevedo-Cosme - Permits and Environmental Compliance Specialist
Limary Vélez Marrero - Permits and Environmental Compliance Specialist
Ivelisse Lorenzo Torres - Permits and Environmental Compliance Specialist
Mónica Machuca Rios - Permits and Environmental Compliance Specialist
Janette I. Cambrelen - Permits and Environmental Compliance Specialist
Santa Ramírez Lebrón - Permits and Environmental Compliance Specialist
Abdul Feliciano Plaza - Permits and Environmental Compliance Specialist
Pedro de León Rodriguez - Permits and Environmental Compliance Specialist
Javier Mercado Barrera - Permits and Environmental Compliance Specialist
Priscilla Toro Rivera - Permits and Environmental Compliance Specialist

Consultant (if applicable): Hannah Danek - SWCA, Incorporated

Direct Comments to: Puerto Rico Department of Housing at comentariosambiental@vivienda.pr.gov

Project Location:
The proposed project, which includes roof mounted photovoltaic panels, battery storage, inverters, and electric wiring, is located on a 0.72-acre parcel (Cadastral Number 334-068-354-01-000) at Carr 118 KM 4.8 Bo Retiro La Tea, San Germán, PR 00683 (see **Appendix A**,

Figure 1- Site Location and **Figure 2**- Site Vicinity). This property is in a suburban area in the southeastern portion of San Germán Municipio. Access to the project areas is provided via an existing paved road that runs north-northeast/south-southwest along the western boundary of the property.

The applicant has identified one location for project activities related to the Intended Use of Grant Funds that are being evaluated under this Categorically Excluded Subject to (CEST) environmental review, also shown on Figures 1 and 2:

- Roof mounted photovoltaic system (18.071954, -67.015141) is in the southwestern portion of the parcel.

Description of the Proposed Project [24 CFR 50.21 & 58.32]**:**

The proposed project involves installing a photovoltaic system (PVS), which includes solar panels, batteries, inverters, and electric wiring on a residential agricultural property (see Appendix C: Site Inspection). An existing electrical meter located on the western facing residence exterior will be used. The area assessed for this environmental review is based on the overall footprint defined by the installation plans and is approximately 0.01 acre in area.

22 solar panels (see Appendix D: Project Quote) will be anchored to the roof of a structure situated in the southwestern area of the property. The concrete foundation and walls within the structure the PVS is constructed atop will support the installation of approximately 2 batteries and 1 invertor that will be wall mounted inside. All electrical wiring, if any, will be installed above-ground. No tree clearing or pruning will occur as a result of project activities.

Level of Environmental Review Determination:
Categorically Excluded per 24 CFR 58.35(a), and subject to laws and authorities at §58.5: 24 CFR 58.35(a)(3)(iii)

Funding Information

Grant Number	HUD Program	Funding Amount
B-18-DP-72-0002	Community Development Block Grant – Mitigation (CDBG-MIT)	$8,285,284,000

Estimated Total HUD Funded Amount: $50,286.00

Estimated Total Project Cost (HUD and non-HUD funds) [24 CFR 58.32(d)]**:** $50,286.00

Compliance with 24 CFR 50.4, 58.5, and 58.6 Laws and Authorities

Record below the compliance or conformance determinations for each statute, executive order, or regulation. Provide credible, traceable, and supportive source documentation for each authority. Where applicable, complete the necessary reviews or consultations and obtain or note applicable permits of

approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

Compliance Factors: Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5 and §58.6	Are formal compliance steps or mitigation required?	Compliance determinations
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.6		
Airport Hazards 24 CFR Part 51 Subpart D	Yes ☐ No ☒	The project site is not within 2,500 ft of a civil primary or commercial service airport or within 15,000 ft of a military airport. The nearest civil primary or commercial service airport, Eugenio Maria De Hostos, is located 80,285 ft (15 mi) from the project site. The nearest military airport, Luis Munoz Marin International Airport, is located 371,335 ft (70 mi) from the project site. No further evaluation is required. The project is in compliance with airport hazards requirements. Airport Hazards Map (**Figure B 1-1**) is provided in **Appendix B, Attachment 1.**
Coastal Barrier Resources Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]	Yes ☐ No ☒	The project site is not located in a Coastal Barrier Resource Systems Unit (CBRS) or Otherwise Protected Area (OPA). There are no CBRS units in San Germán Municipio. The closest CBRS unit, Bahia Montalva (PR-64P). is located 34,636 ft (7 mi) from the project site. No further evaluation is required. The project is in compliance with the Coastal Barrier Resources Act. Coastal Barrier Resources Map (**Figure B 2-1**) is provided in **Appendix B, Attachment 2**.
Flood Insurance Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]	Yes ☐ No ☒	A review of the FEMA Flood Insurance Rate Map (FIRM), Community Panel 72000C1560J (effective date 11/18/2009), shows the project site is in Flood Zone X, which is not in a Special Flood Hazard Area (SFHA). Flood insurance is not required. No further evaluation is required. The project is in compliance with the Flood Disaster Protection Act and National Flood Insurance Reform Act.

		FIRM (**Figure B 3-1**) is provided in **Appendix B, Attachment 3**.
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5		
Clean Air Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93	Yes ☐ No ☒	The project site is in San Germán Municipio, which is within a U.S. Environmental Protection Agency (USEPA) designated attainment area. Municipios in Nonattainment or Maintenance areas include Arecibo, Bayamon, Catano, Guaynabo, Salinas, San Juan and Toa Baja. The project location is 164,264 ft (31 mi) from the nearest non-attainment area. Project activities include installation of photovoltaic system (PVS), which includes solar panels, batteries, inverters, and electric wiring. The project is not anticipated to have a negative impact on air quality. Emissions associated with the proposed actions are temporary and limited to the use of small construction equipment and will be well below the Federal General Conformity Rule de minimis thresholds stated in 40 CFR §61.145. The proposed project activities do not trigger permitting requirements under the DNER 1995 RCAP Puerto Rico Environmental Air Regulations. Furthermore, under Puerto Rico's air quality regulations, the project meets the exemption criteria outlined in Rule 206 of the RCAP (1995), Regulation No. 5300, and is therefore in compliance with the Clean Air Act and all applicable federal, state, and local air quality standards. No further evaluation is required. The project is in compliance with the Clean Air Act. List of Non-Attainment/Maintenance Status Counties in Puerto Rico, and Clean Air Map (**Figure B 4-1**) are provided in **Appendix B, Attachment 4.**
Coastal Zone Management Coastal Zone Management Act, sections 307(c) & (d)	Yes ☐ No ☒	The project site is not located within the Puerto Rico Coastal Management Zone. The closest coastal zone area is located 29,294 ft (6 mi) from the project site. No further evaluation is required. The project is in compliance with the Coastal Zone Management Act. Coastal Zone Map (**Figure B 5-1**) is provided in **Appendix B, Attachment 5**.

Contamination and Toxic Substances 24 CFR Part 50.3(i) & 58.5(i)(2)	Yes ☒ No ☐	The project site was evaluated for potential contamination by conducting a field site inspection (Appendix C) on May 9, 2025, to identify any onsite hazards including, but not limited to, soil staining, above ground storage tanks, signs of underground storage tanks, odors, hazardous debris etc. The site inspection did not identify any onsite or directly adjacent hazards, stained soil or distressed vegetation and the project is in compliance with contamination and toxic substances requirements. On January 11, 2024, HUD issued Notice CPD-23-103, Departmental Policy for Addressing Radon in the Environmental Review Process, which requires the Responsible Entity (RE) to consider radon as part of the site contamination analysis for projects subject to HUD's contamination regulations at 24 CFR 58.5(i), unless the project qualifies for an exemption. According to the notice, radon must be addressed in environmental reviews for projects involving structures that are or will be occupied for at least four (4) hours per day. The eligible business activities under the Farm and Energy Resilience (FER) Program are expected to meet this occupancy threshold and thus would typically require radon consideration as part of the environmental review. However, there is currently no largescale dataset available for Puerto Rico that meets HUD's standards for determining radon hazard levels. On March 6, 2024, the Puerto Rico Department of Housing (PRDOH) formally consulted with HUD to document the absence of reliable scientific data and to explain that radon testing in Puerto Rico would be impractical and infeasible. This determination was based on prior research efforts that lacked adequate laboratory support, making it difficult to obtain accurate or consistent results. Additionally, there is a limited number of trained radon testing professionals on the island, which presents another barrier to compliance with HUD's testing requirements. In response, on May 15, 2024, HUD requested that PRDOH consult with relevant agencies—including the Environmental Protection Agency (EPA), United States Geological Survey (USGS), University of Puerto Rico – Mayagüez Campus, and the Puerto Rico Department of Natural and Environmental

		Resources (DNER)—to further document the lack of scientific data, as outlined in Section III.C. of Notice CPD-23-103. On August 20, 2024, PRDOH conducted formal consultations with the above-mentioned agencies and submitted information requests to state and federal entities. Responses were received from the following: United States Geological Survey (USGS); Centers for Disease Control and Prevention (CDC); Puerto Rico Department of Health; United States Environmental Protection Agency (EPA). All responding agencies confirmed the absence of reliable, large-scale radon data for Puerto Rico and acknowledged the technical and logistical challenges associated with radon testing on the island. Based on these consultations and findings, radon testing is deemed infeasible and impracticable for the Farm and Energy Resilience (FER) Program. Therefore, no further consideration or evaluation of radon is required as part of the environmental review, in accordance with HUD Notice CPD-23- 103. Supporting documentation is provided in Appendix B, Attachment 6. In conclusion, after reviewing the program in the context of the site contamination analysis requirements under 24 CFR 58.5(i), PRDOH has determined that radon testing is impractical and infeasible, and no further evaluation is required for radon. Due to the ca. 1970 date of construction, lead-based paint is presumed to be present. As the project activities do not involve significant paint disturbances, a screen for lead-based paint requirements will be conducted prior to starting the work. Work must be performed by RRP Certified Renovation Firm. At least one RRP-Certified Renovator must be at the job site or available when work is being done. Workers at the job site must receive on-the-job training from the Certified Renovator. Lead Safe Work Practices are recommended if paint disturbance is "di minimis". Lead Safe Work Practices are required if paint disturbance exceeds "de minimis" but not EPA's minor repair and maintenance threshold. Due to the project activities disturbing less than 160 square feet of existing ACM surface (roofing materials, wall insulation) in a facility (40 CFR 61.145(a)(4)), the activities that will occur will not exceed that threshold at the project

		site due to the scope of project activities being limited to installation of equipment on existing surfaces. ACM surfaces such as roofing materials and wall insulation will only be disturbed where the racking system will be connected to the roof by bolts and installation of batteries and therefore it is assumed that the project will not disturb more than 160 sq ft of ACM surfaces and the disturbance is considered de minimis in nature. No mitigation is required. In addition, a desktop review of USEPA databases, NEPAssist, and other sources was conducted to determine if the project site was located near dump sites, junk yards, landfills, hazardous waste sites, or industrial sites, including USEPA National Priorities List Sites (Superfund sites), CERCLA or state-equivalent sites, RCRA Corrective Action sites with release(s) or suspected release(s) requiring clean-up action and/or further investigation. The parcel has been used for agricultural purposes and there has been no change in land use in the last 20 years. The project is located in a suburban area of San Germán Municipio and will continue to be used for agricultural purpose. The desktop review found one hazardous waste site within 3,000 feet of the project area. However, due to the site being inactive and having no violations, the facility identified will not affect the health and safety of project occupants or conflict with the intended use of the property. The project is in compliance with contamination and toxic substances requirements. Contamination and Toxics Map (**Figure B 6-1**), Desktop Review Summary and Supporting Documents, Radon Memorandum and Correspondence are provided in **Appendix B, Attachment 6**.
Endangered Species Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402	Yes ☐ No ☒	The project activities are not expected to affect protected species or critical habitats. Threatened, endangered, and migratory bird species were identified by reviewing data from the United States Fish and Wildlife Service (USFWS) Information and Planning Consultation (IPaC) Tool. In addition, critical species habitat was reviewed through the USFWS IPaC Critical Habitat Portal.

		The review identified one federally listed species (Puerto Rican boa [*Chilabothrus inornatus*]) with the potential to occur within the project area. There is no designated critical habitat but there is proposed critical habitat within the project area for the Puerto Rican Skink (*Spondylurus nitidus*). Although the project overlaps with proposed critical habitat for the Puerto Rican skink, it will not be impacted because the project area is located on an existing structure on previously disturbed land. The closest final designated critical habitat is located 7,037 feet (1 mile) northeast. The project activities, which include the installation of a PVS on the roof of an existing building on previously disturbed land, will not result in ground disturbing activities or vegetation removal. A qualified biologist reviewed the proposed activity location and determined that there is no suitable habitat present for any federally listed species at the proposed project location. Therefore, as currently designed, the proposed project activities will have *no effect* on any federally listed species or designated critical habitat. If a Puerto Rican boa is found in the project action site, work shall cease until the boa moves off on its own. If the boa does not move off, the Construction Manager shall contact the Puerto Rico Department of Natural and Environmental Resources and ask for them to relocate the boa. The current project activities do not involve the removal of trees. If any tree clearing is to be proposed, the project will need to be re-evaluated for impacts to threatened and endangered species. Threatened and Endangered Species USFWS Consultation with IPaC, and Critical Habitat Map (**Figure B 7-1**) are provided in **Appendix B, Attachment 7**.
Explosive and Flammable Hazards 24 CFR Part 51 Subpart C	Yes ☐ No ☒	The project includes the new construction of a photovoltaic system (PVS), which includes solar panels, batteries, inverters, and electric wiring. The project itself is not the development of a hazardous facility, nor does it include the installation of an AST. The project will not increase residential institutional, recreational, commercial or industrial densities, or trigger

		conversion. No further evaluation is required. The project is in compliance with explosive and flammable hazard requirements.
Farmlands Protection Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658	Yes ☐ No ☒	This project does not include any activities that would convert agricultural land to unallowed non-agricultural use. Per the USGS/NRCS Web Soil Survey, the project area crosses two mapped soil series: Ua (Urban Land) and MqC (Montegrande clay, 2 to 12 percent slopes). Prime farmlands are within the project area. Although the project improvements of the existing structure, the project is in compliance with the Farmland Protection Policy Act (FFPA) as the project will not convert one land use to another. No further review is required. Prime Farmland Map (**Figure B 8-1**) is provided in **Appendix B, Attachment 8**.
Floodplain Management Executive Order 11988, particularly section 2(a); 24 CFR Part 55	Yes ☐ No ☒	The current project comprises non-critical actions that lie entirely outside the SFHA. A review of the Advisory Base Flood Elevation (ABFE) map, issued 11/12/2024, shows the project site is in Flood Zone X, which is not in a Special Flood Hazard Area (SFHA). The proposed project is in compliance with 24 CFR Part 55 and Executive Order 11988. PFIRMs in Puerto Rico were only developed for certain sections of the municipalities of Carolina, Canovanas, Loiza, San Juan and Trujillo Alto. The proposed project is situated within the municipality of San Germán; as a result, PFIRM data is not available for this area and was therefore not reviewed. ABFE and Preliminary Floodplain Map (Figure B 9-1 and 9-2) are provided in **Appendix B, Attachment 9**.
Historic Preservation National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800	Yes ☐ No ☒	The project was assessed for its potential effects on identified historic properties. This assessment considered direct, indirect, and cumulative impacts on the integrity and significance of the properties. Tyra Brunz, SOI Historian (SOI-Qualified Architectural Historian) conducted historical archaeological and architectural evaluations for the property. The evaluation concluded that project actions will not affect the historic properties that compose the Area of Potential Effect (APE).

		• There are no Listed, Eligible, or locally designated properties within a ¼ mile radius of the APE. • No historic/eligible properties or archaeological sites within the APE or visual APE will be directly affected by the proposed project. Consultation with the SHPO and other consulting parties was conducted to discuss the findings and potential impacts. Public views and concerns about historic preservation issues were also considered. The consultation process resulted in a determination of no historic properties. In a letter dated August 27, 2025, the State Historic Preservation Office (SHPO) executive director Carlos A. Rubio Cancela indicates the following: "Our records support your finding of **no historic properties affected** within the project's area of potential effects". Therefore, the project is in compliance with the National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 C.F.R. Part 800. SHPO consultation, including a Previously Recorded Cultural Resources Map, are provided in **Appendix B, Attachment 10**. Required mitigation measures are listed in the section below.
Noise Abatement and Control Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B	Yes ☐ No ☒	The project activities are limited to the installation of a new solar panel and battery system, and the project does not involve new construction; does not expand the existing building footprint; and does not convert the property to a more noise-sensitive use - consistent with the regulatory requirement at 24 CFR § 51.101(a)(3), noise analysis is not required. The project is in compliance with HUD Noise Abatement and Control.
Sole Source Aquifers Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149	Yes ☐ No ☒	According to the USEPA's Source Water Protection, Sole Source Aquifer Protection Program, there are no sole source aquifers in Puerto Rico. The nearest Sole Source Aquifer is in Florida, 5,235,818 ft (992 mi) away. No further evaluation is required. The project is in compliance with the Safe Drinking Water Act. Sole Source Aquifer Map (**Figure B 11-1**) is provided in **Appendix B, Attachment 11**.

Wetlands Protection Executive Order 11990, particularly sections 2 and 5	Yes ☐ No ☒	The project site was reviewed for wetlands using the U.S. Fish and Wildlife Service (USFWS) Wetland Inventory Mapper, National Wetland Inventory and the National Hydrography Database datasets. No wetlands or other water features were determined to be present on site or within the project activity area. No further evaluation is required. The project is in compliance with Executive Order 11990. Wetlands Protection Map (**Figure B 12-1**) is provided in **Appendix B, Attachment 12**.
Wild and Scenic Rivers Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)	Yes ☐ No ☒	A review of the USFWS National Wild and Scenic River mapper identified no Wild and Scenic Rivers or National Rivers Inventory (NRI) rivers present within one mile of the project activity area. The closest Wild and Scenic River segment is located 431,220 ft (82 mi) from the project site. No further evaluation is required. The project is in compliance with the Wild and Scenic Rivers Act. Wild and Scenic Rivers Map (**Figure B 13-1**) is provided in **Appendix B, Attachment 13**.

Field Inspection (Date and completed by)**:**
May 9, 2025, completed by Eileen Ortiz

Summary of Findings and Conclusions:

Based on the project activities and location assessed, the proposed project would not result in any meaningful negative impacts to the project activity site or surrounding natural, historical, and water resources; generate significant air or noise pollution, coastal zones, coastal barrier resources, or airport hazards.

Mitigation Measures and Conditions

Summarize below all mitigation measures adopted by the Responsible Entity to reduce, avoid, or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements, and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

Law, Authority, or Factor	Mitigation Measure

Contamination and Toxic Substances 24 CFR Part 50.3(i) & 58.5(i)(2)	Due to the ca. 1970 date of construction, lead-based paint is presumed to be present. As the project activities do not involve significant paint disturbances, a screen for lead-based paint requirements will be conducted prior to starting the work. Work must be performed by RRP Certified Renovation Firm. At least one RRP-Certified Renovator must be at the job site or available when work is being done. Workers at the job site must receive on-the-job training from the Certified Renovator. Lead Safe Work Practices are recommended if paint disturbance is "di minimis". Lead Safe Work Practices are required if paint disturbance exceeds "de minimis" but not EPA's minor repair and maintenance threshold.

Determination:

☐ This categorically excluded activity/project converts to Exempt, per 58.34(a)(12) because there are no circumstances which require compliance with any of the federal laws and authorities cited at §58.5. **Funds may be committed and drawn down after certification of this part** for this (now) EXEMPT project; OR

☒ This categorically excluded activity/project cannot convert to Exempt because there are circumstances which require compliance with one or more federal laws and authorities cited at §58.5. Complete consultation/mitigation protocol requirements, **publish NOI/RROF and obtain "Authority to Use Grant Funds"** (HUD 7015.16) per Section 58.70 and 58.71 before committing or drawing down any funds; OR

☐ This project is now subject to a full Environmental Assessment according to Part 58 Subpart E due to extraordinary circumstances (Section 58.35(c)).

Preparer Signature: Hannah Danek Date: 10/09/2025

Name/Title/Organization: Hannah Danek, Associate Project Manager, SWCA Incorporated

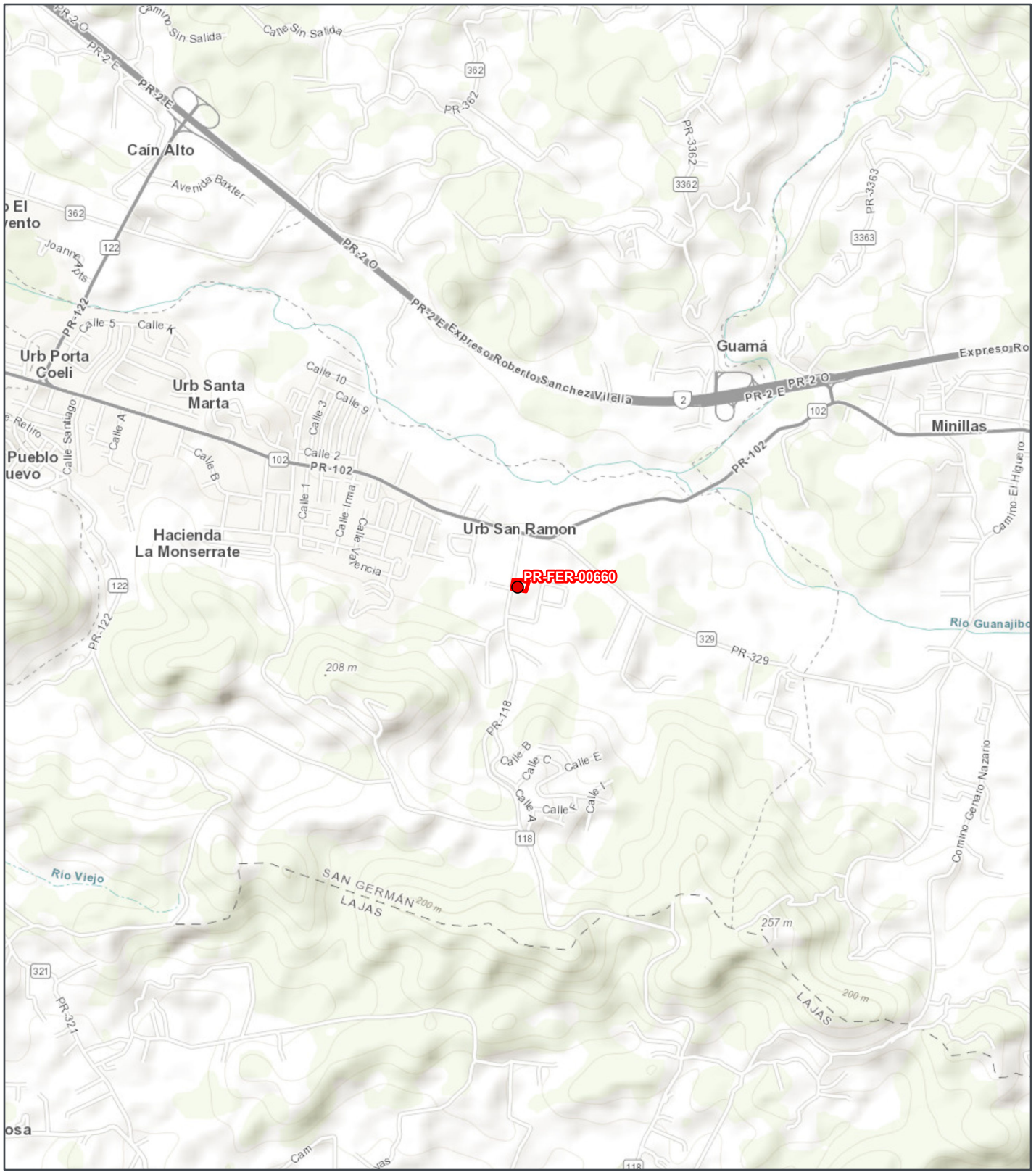
Responsible Entity Agency Official Signature: Digitally signed by Javier Mercado Date: 2025.10.16 13:47:29 -04'00' Date: 10/16/2025

Name/Title: Javier Mercado Barrera / Permits and Environmental Compliance Specialist / PRDOH

This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).

Appendix A
Project Overview Figures

Figure 1
Site Location Map



FER PROGRAM

Figure A-1:
Site Location

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

Site

Site Parcel

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683

Parcel ID: 334-068-354-01-000
18.071954, -67.015141

Base Map: ESRI ArcGIS Online, accessed June 2025
Updated: 6/6/2025

Layout: Site Location
Aprx: 78764_ferTier2Maps

N

1:24,000

Puerto Rico

0 1,000 2,000 Feet

0 320 640 Meters

Figure 2
Site Vicinity Map

FER PROGRAM

Figure A-2:
Site Vicinity

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Battery/Inverter (within existing structure)
- Wall mounted Electric Meter

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683

Parcel ID: 334-068-354-01-000
18.071954, -67.015141

Base Map: USA NAIP Imagery
Imagery Year: 2022
Updated: 6/6/2025

Layout: Site Vicinity
Aprx: 78764_ferTier2Maps

N

1:600

Puerto Rico

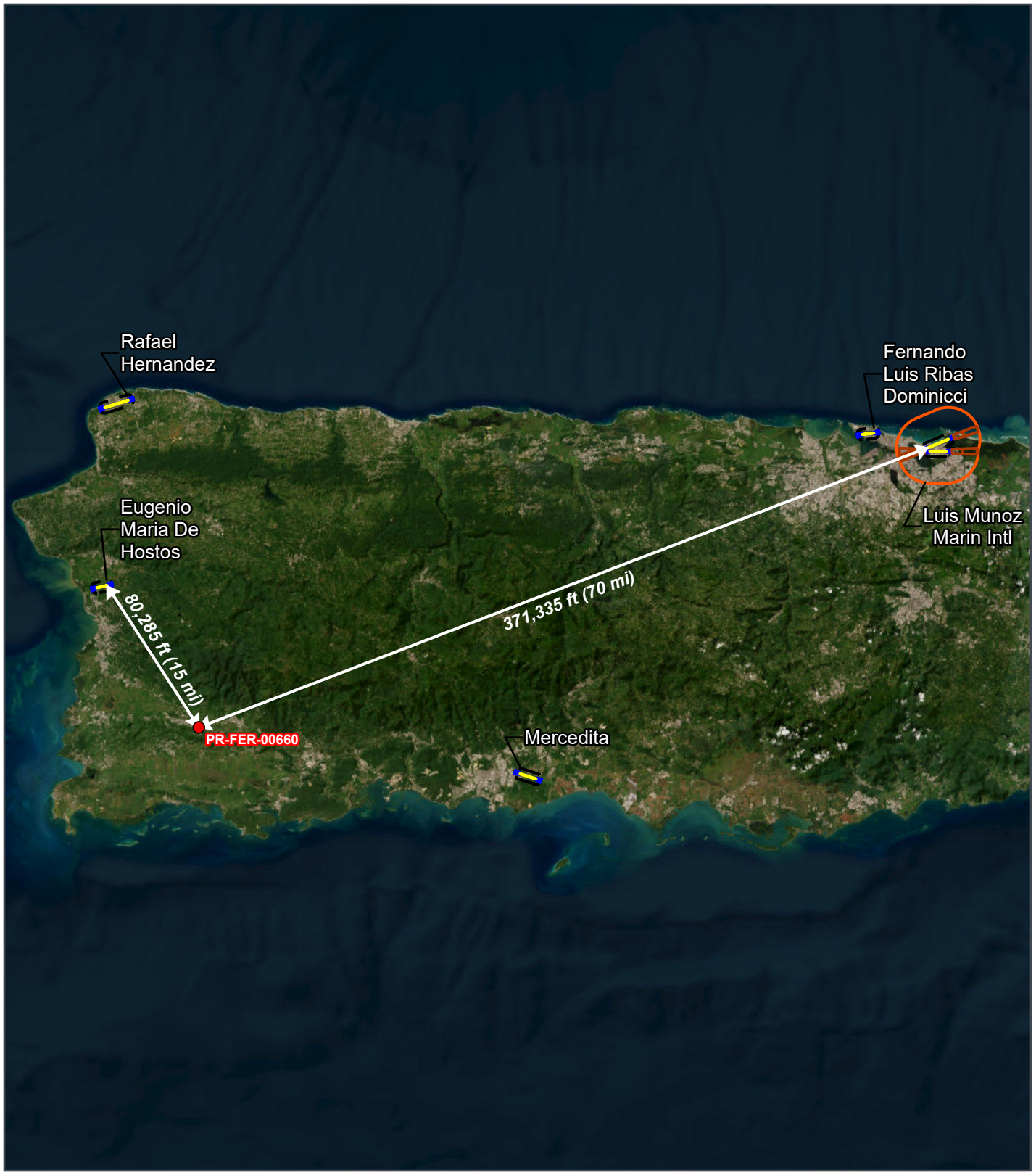
0 25 50 Feet

0 8 16 Meters

Appendix B

Attachments and Supporting Documentation

Attachment 1
Airport Hazards Map



FER PROGRAM

Figure B 1-1: Airport Hazards Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site
- Airport Runway
- Accident Potential Zones (APZ)
- Runway Protection Zones (RPZ)
- 2,500-FT Civil Airport Buffer
- 15,000-FT Military Airport Buffer

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
18.071954, -67.015141

Data Source: https://geodata.bts.gov/
Base Map: ESRI ArcGIS Online, accessed June 2025

Updated: 6/6/2025
Layout: Airport Hazards
Aprx: 78764_ferTier2Maps

N

1:794,000

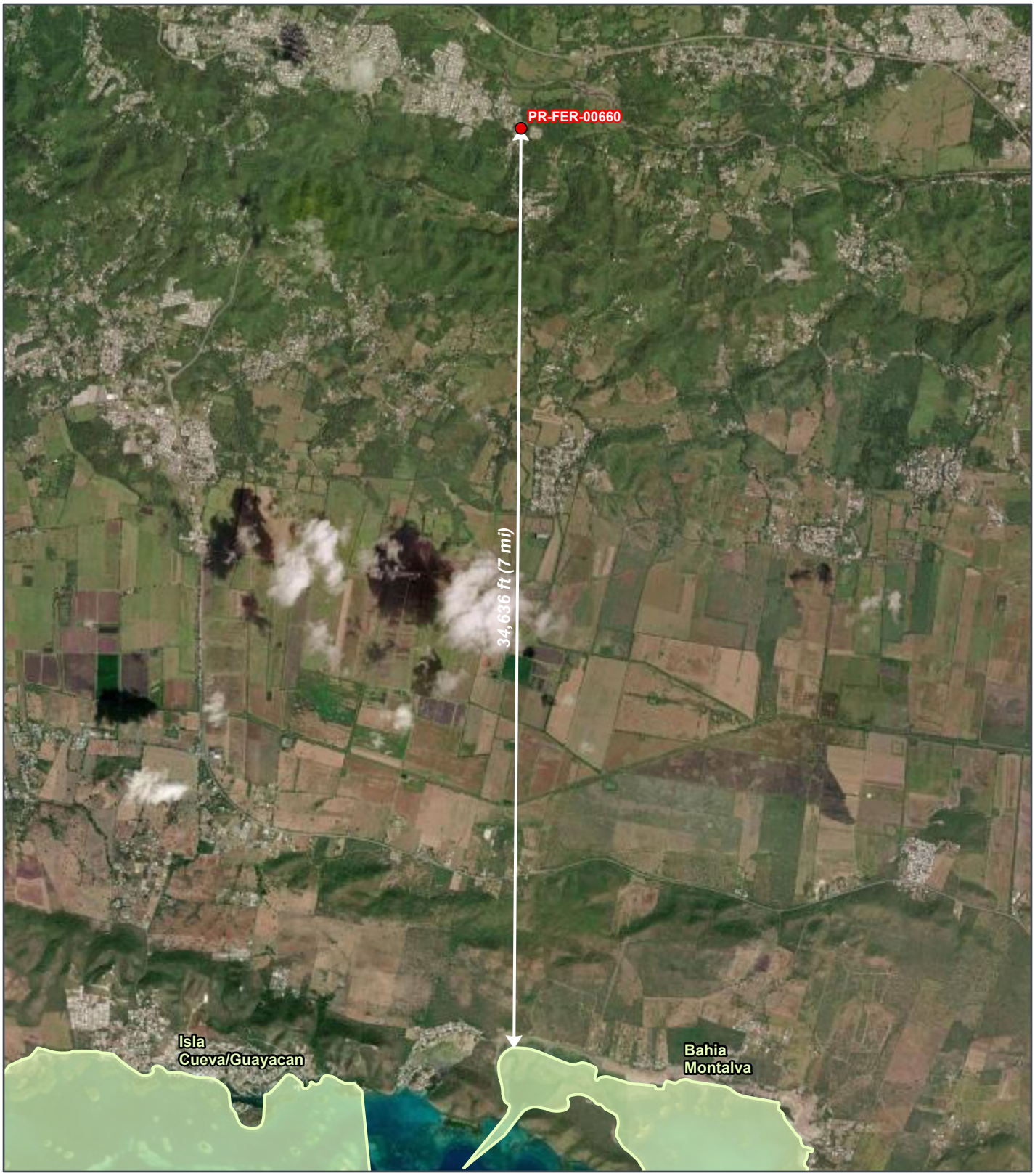
Puerto Rico

0 37,320 74,640 Feet

0 10,000 20,000 Meters

Attachment 2

Coastal Barrier Resources Map



FER PROGRAM

Figure B 2-1: Coastal Barrier Resources Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site
- Site Parcel
- Otherwise Protected Area
- System Unit

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
18.071954, -67.015141

Data Source: https://cbrsgis.wim.usgs.gov/arcgis/rest/services/CoastalBarrierResourcesSystem/MapServer
Base Map: ESRI ArcGIS Online, accessed June 2025
Updated: 6/6/2025
Layout: Coastal Barrier Resources System

N

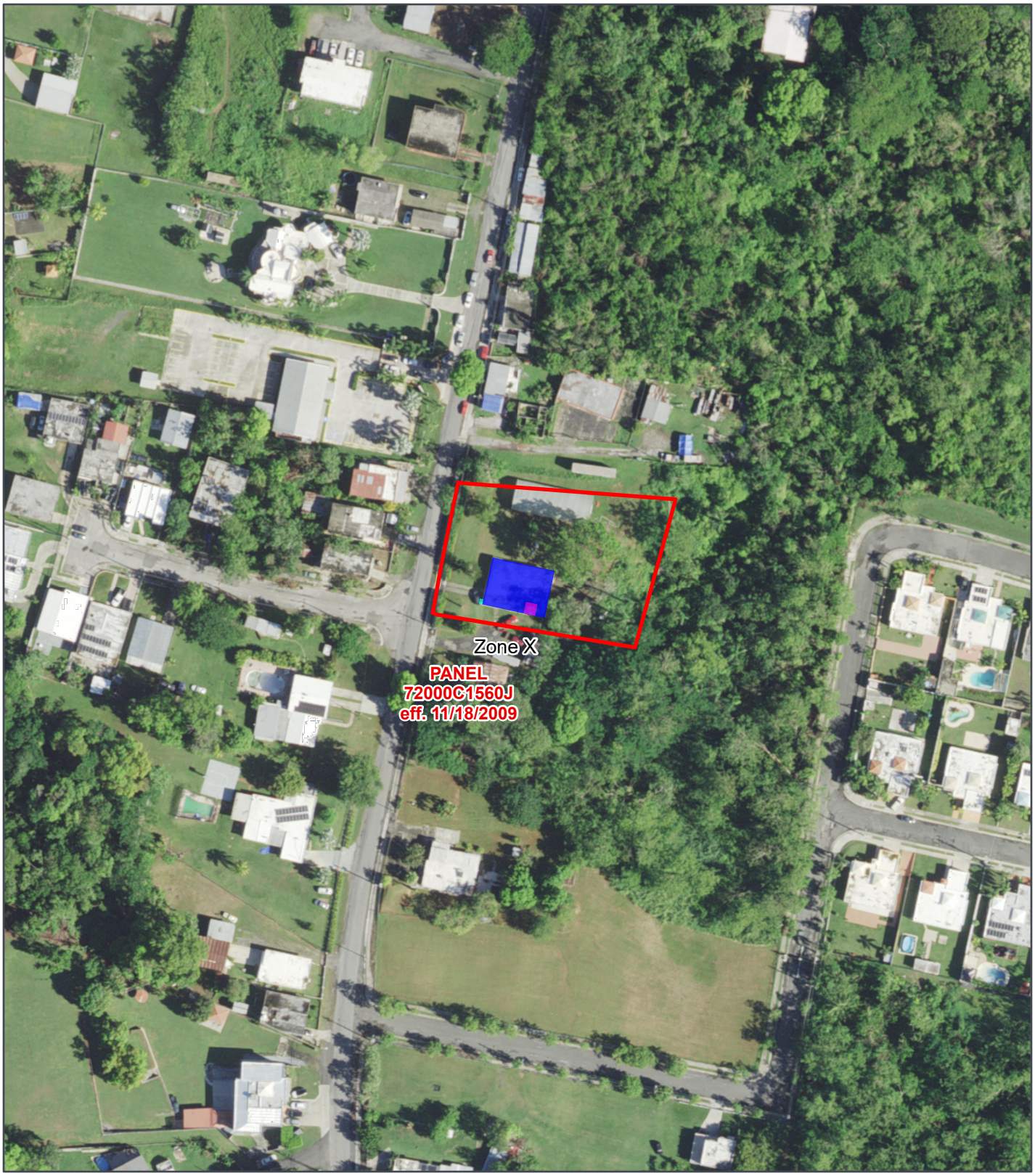
1:63,000

Puerto Rico

0 2,500 5,000 Feet

0 840 1,680 Meters

Attachment 3
Flood Insurance Rate Map



FER PROGRAM

Figure B 3-1: Flood Insurance Rate Map (FIRM)

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Battery/Inverter (within existing structure)
- Wall mounted Electric Meter
- Base Flood Elevations
- Zone A
- Zone AE
- Zone AH
- Zone AO
- Zone VE
- Floodway
- Zone X - Shaded (500-year floodplain)
- Zone X - Unshaded
- Area Not Included
- Open Water

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
18.071954, -67.015141

Data Source: https://hazards.fema.gov/gis/nfhl/rest/services/public/NFHL/MapServer

Base Map: USA NAIP Imagery Imagery Year: 2022

Updated: 6/6/2025
Layout: Effective Floodplain
Aprx: 78764_ferTier2Maps

N

1:1,700

Puerto Rico

0 75 150 Feet

0 20 40 Meters

Attachment 4

List of Non-Attainment/Maintenance Status Counties in Puerto Rico and Clean Air Map

Puerto Rico Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

Data is current as of January 31, 2024

Listed by County, NAAQS, Area. The 8-hour Ozone (1997) standard was revoked on April 6, 2015 and the 1-hour Ozone (1979) standard was revoked on June 15, 2005.

* The 1997 Primary Annual PM-2.5 NAAQS (level of 15 μg/m^3) is revoked in attainment and maintenance areas for that NAAQS. For additional information see the PM-2.5 NAAQS SIP Requirements Final Rule, effective October 24, 2016. (81 FR 58009)

Change the State:
PUERTO RICO **GO**

Important Notes

Download National Dataset: dbf | xls | Data dictionary (PDF)

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
PUERTO RICO								
Arecibo Municipio	Lead (2008)	Arecibo, PR	11 12 13 14 15 16 17 18 19 20 21 22 23 24	/ /		Part	32,185	72/013
Bayamon Municipio	Sulfur Dioxide (2010)	San Juan, PR	18 19 20 21 22 23 24	/ /		Part	22,921	72/021
Catano Municipio	Sulfur Dioxide (2010)	San Juan, PR	18 19 20 21 22 23 24	/ /		Whole	28,140	72/033
Guaynabo Municipio	PM-10 (1987)	Mun. of Guaynabo, PR	92 93 94 95 96 97 98 99 00 01 02 03 04 05 06 07 08 09	02/11/2010	Moderate	Part	90,470	72/061
Guaynabo Municipio	Sulfur Dioxide (2010)	San Juan, PR	18 19 20 21 22 23 24	/ /		Part	23,802	72/061
Salinas Municipio	Sulfur Dioxide (2010)	Guayama-Salinas, PR	18 19 20 21 22 23 24	/ /		Part	23,401	72/123
San Juan Municipio	Sulfur Dioxide (2010)	San Juan, PR	18 19 20 21 22 23 24	/ /		Part	147,963	72/127
Toa Baja Municipio	Sulfur Dioxide (2010)	San Juan, PR	18 19 20 21 22 23 24	/ /		Part	52,441	72/137

Important Notes

FER PROGRAM

Figure B 4-1:
Clean Air Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site
- 8-Hour Ozone (2015 Standard)*
- Lead (2008 Standard)
- PM-2.5 (2012 Standard)*
- Sulfur Dioxide (2010 Standard)

*No Data in Puerto Rico

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
18.071954, -67.015141

Data Source: https://geopub.epa.gov/arcgis/rest/services/NEPAssist/NEPAVELayersPublic_fgdb/MapServer
Base Map: ESRI ArcGIS Online, accessed June 2025
Updated: 6/6/2025
Layout: Clean Air
Aprx: 78764_ferTier2Maps

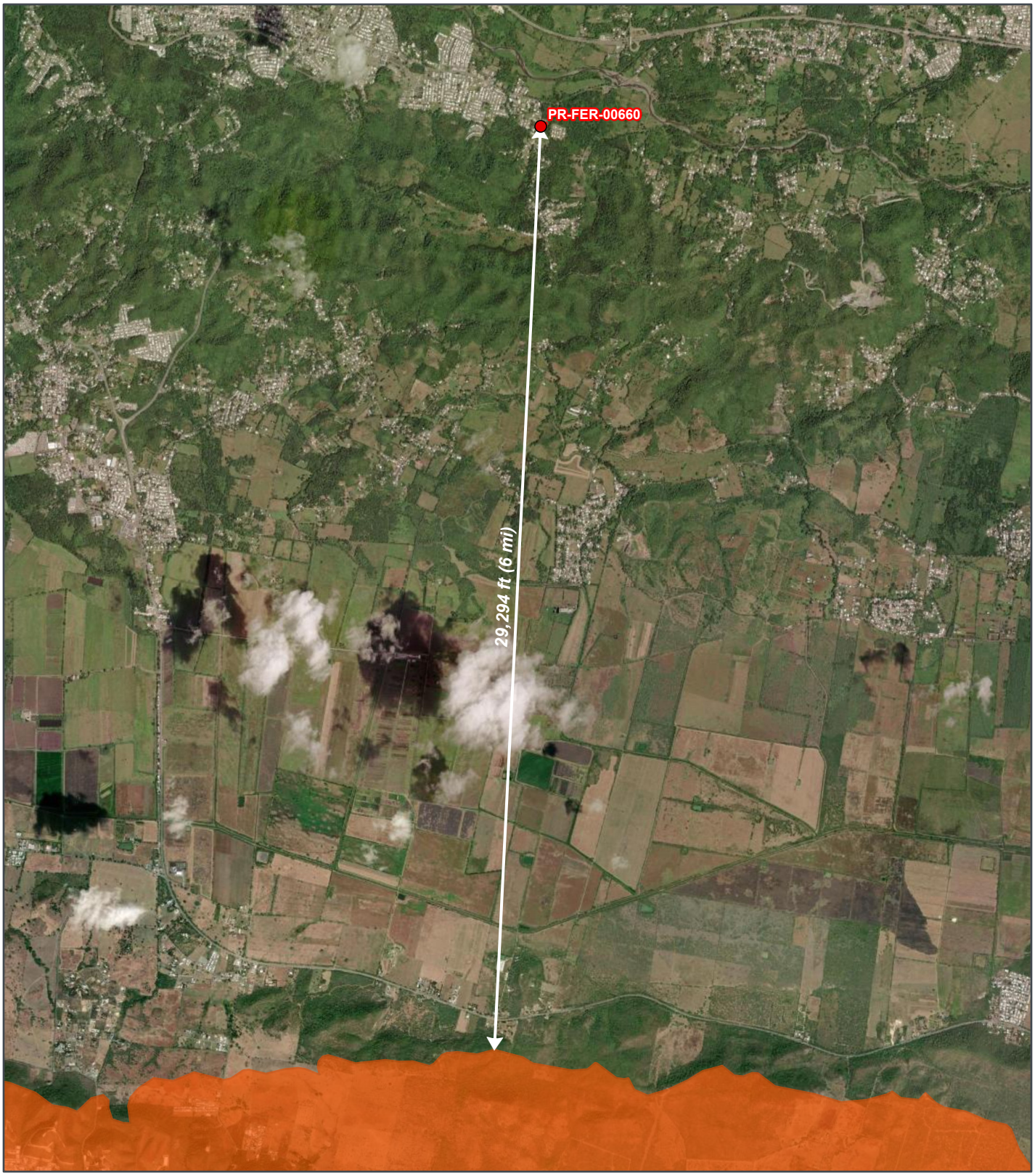
N

1:509,000

Puerto Rico

0 20,000 40,000 Feet
0 6,000 12,000 Meters

Attachment 5
Coastal Zone Map



FER PROGRAM

Figure B 5-1: Coastal Zone Management Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site
- Roof Mounted Photovoltaic System
- Battery/Inverter (within existing structure)
- Wall mounted Electric Meter
- Coastal Management Zone

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
18.071954, -67.015141

Data Source: https://coast.noaa.gov/arcgis/rest/services/Hosted/CoastalZoneManagementAct/
Base Map: ESRI ArcGIS Online, accessed June 2025
Updated: 6/6/2025
Layout: Coastal Zone Management
Aprx: 78764_ferTier2Maps

N

1:53,000

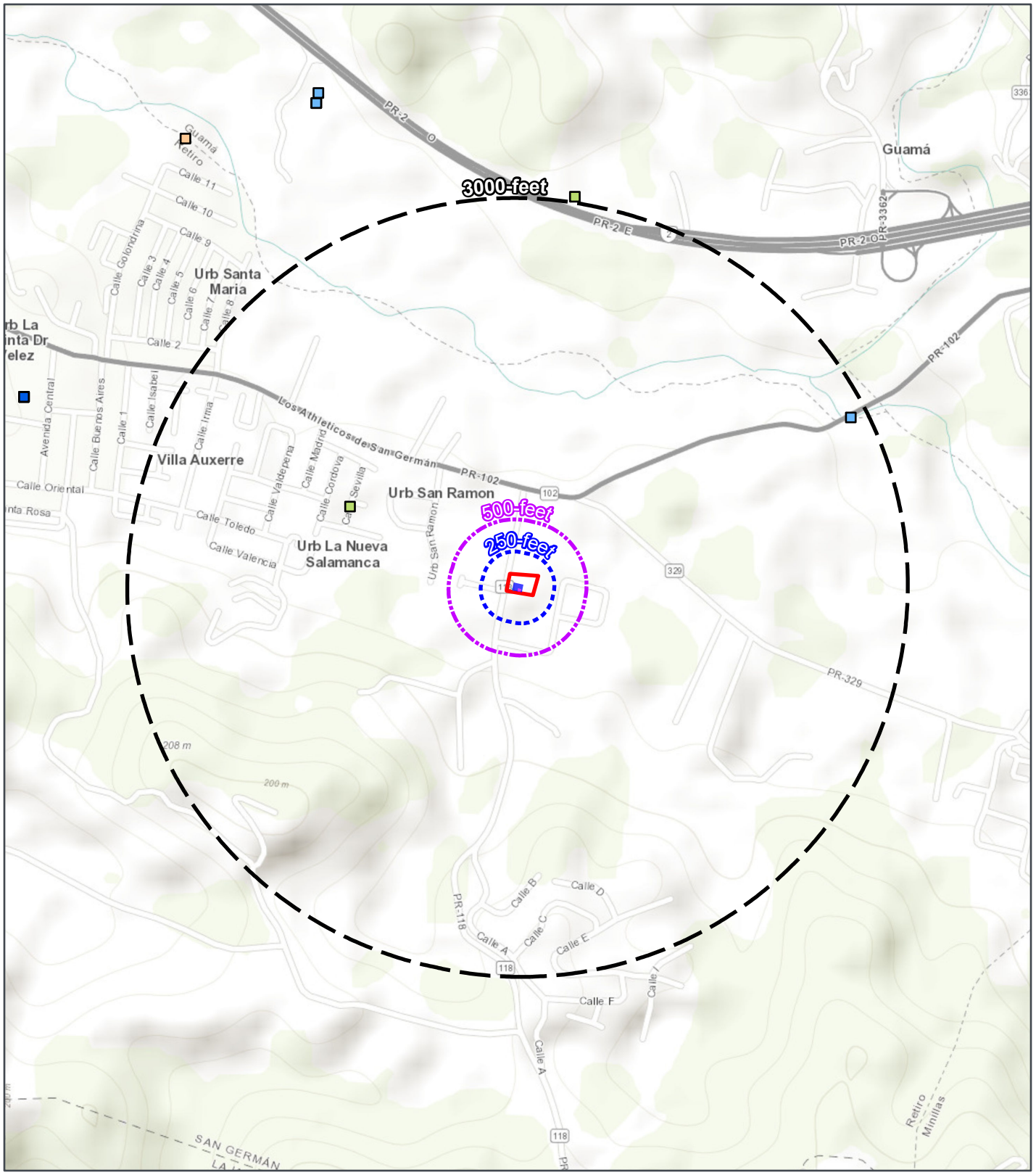
Puerto Rico

0 2,000 4,000 Feet

0 710 1,420 Meters

Attachment 6

Contamination and Toxics Map, Desktop Review Summary and Supporting Documents, Radon Memorandum and Correspondence



FER PROGRAM

Figure B 6-1: Contamination and Toxic Substances Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Battery/Inverter (within existing structure)
- Wall mounted Electric Meter
- Buffer (250-feet)
- Buffer (500-feet)
- Buffer (3000-feet)
- Air pollution
- Brownfields
- Hazardous waste
- Superfund
- Toxic releases
- Water dischargers

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
Center of Map:
67.015153°W 18.071933°N

Data Source: https://geopub.epa.gov/arcgis/rest/services/EMEF/efpoints/MapServer
Base Map: ESRI ArcGIS Online, accessed June 2025
Updated: 6/6/2025
Layout: Contamination and Toxic Substances

N

1:13,000

Puerto Rico

0 610 1,220 Feet

0 170 340 Meters

Contamination and Toxics Sites Summary

49 CALLE SAVILLA, SAN GERMAN, PR 00683

Database	Primary ID	Facility Name	Facility Address	Secondary ID	Latitude	Longitude	Distance (ft)	Status
Hazardous Waste (RCRA)	110004894801	AUTO PIEZAS LUGO	49 CALLE SAVILLA, SAN GERMAN, PR 00683	PRR000010744	18.073661	-67.018914	1410	No violations identified. Listed as inactive.

Detailed Facility Report

Facility Summary

AUTO PIEZAS LUGO

49 CALLE SAVILLA, SAN GERMAN, PR 00683

FRS (Facility Registry Service) ID: 110004894801

EPA Region: 02

Latitude: 18.073661

Longitude: -67.018914

Locational Data Source: FRS

Industries: --

Indian Country: N

Enforcement and Compliance Summary

Statute	RCRA
Compliance Monitoring Activities (5 years)	--
Date of Last Compliance Monitoring Activity	--
Compliance Status	No Violation Identified
Qtrs in Noncompliance (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--

Regulatory Information

Clean Air Act (CAA): No Information

Clean Water Act (CWA): No Information

Resource Conservation and Recovery Act (RCRA): Inactive Other, (PRR000010744)

Safe Drinking Water Act (SDWA): No Information

Other Regulatory Reports

Air Emissions Inventory (EIS): No Information

Greenhouse Gas Emissions (eGGRT): No Information

Toxic Releases (TRI): No Information

Compliance and Emissions Data Reporting Interface (CEDRI): No Information

Go To Enforcement/Compliance Details
Known Data Problems <https://epa.gov/resources/echo-data/known-data-problems>

Facility/System Characteristics

Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110004894801					N	18.073661	-67.018914
RCRAInfo	RCRA	PRR000010744	Other	Inactive ( )			N		

Facility Address

System	Statute	Identifier	Facility Name	Facility Address	Facility County
FRS		110004894801	AUTO PIEZAS LUGO	49 CALLE SAVILLA, SAN GERMAN, PR 00683	San Germán Municipio
RCRAInfo	RCRA	PRR000010744	AUTO PIEZAS LUGO	49 CALLE SAVILLA, SAN GERMAN, PR 00683	San Germán Municipio

Facility SIC (Standard Industrial

Facility NAICS (North American Industry

Classification) Codes

System	Identifier	SIC Code	SIC Description
No data records returned			

Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
No data records returned			

Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

Enforcement and Compliance

Compliance Monitoring History

Last 5 Years

Statute	Source ID	System	Activity Type	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
No data records returned							

Entries in italics are not included in ECHO's Compliance Monitoring Activity counts because they are not compliance monitoring strategy <https://www.epa.gov/compliance/compliance-monitoring-programs> *activities or because they are not counted as inspections within EPA's Annual Results* <https://www.epa.gov/enforcement/enforcement-data-and-results>.

Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
RCRA	PRR000010744	No	07/05/2025	0	07/04/2025

Three-Year Compliance History by Quarter

Statute	Program/Pollutant/Violation Type		QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12+
RCRA (Source ID: PRR000010744)			07/01-09/30/22	10/01-12/31/22	01/01-03/31/23	04/01-06/30/23	07/01-09/30/23	10/01-12/31/23	01/01-03/31/24	04/01-06/30/24	07/01-09/30/24	10/01-12/31/24	01/01-03/31/25	04/01-06/30/25
	Facility-Level Status		No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified	No Violation Identified
	Violation	Agency												

Informal Enforcement Actions

Last 5 Years

Statute	System	Source ID	Type of Action	Lead Agency	Date
No data records returned					

Entries in italics are not counted as "informal enforcement actions" in EPA policies pertaining to enforcement response tools.

Formal Enforcement Actions

Last 5 Years

Statute	System	Law/ Section	Source ID	Type of Action	Case No.	Lead Agency	Case Name	Issued/ Filed Date	Settlements/ Actions	Settlement/ Action Date	Federal Penalty Assessed	State/ Local Penalty Assessed	Penalty Amount Collected	SEP Value	Comp Action Cost
No data records returned															

Environmental Conditions

Watersheds

12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Water Body Name (ICIS (Integrated Compliance Information System))	Beach Closures Within Last Year	Beach Closures Within Last Two Years	Pollutants Potentially Related to Impairment	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
No data records returned						

Assessed Waters From Latest State Submission (ATTAINS)

State	Report Cycle	Assessment Unit ID	Assessment Unit Name	Water Condition	Cause Groups Impaired	Drinking Water Use	Ecological Use	Fish Consumption Use	Recreation Use	Other Use
No data records returned										

Air Quality Nonattainment Areas

Pollutant	Within Nonattainment Status Area?	Nonattainment Status Applicable Standard(s)	Within Maintenance Status Area?	Maintenance Status Applicable Standard(s)
No data records returned				

Pollutants

Toxics Release Inventory History of Reported Chemicals Released or Transferred in Pounds per

Year at Site

TRI Facility ID	Year	Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Disposal to Land	Total On-Site Releases	Total Off-Site Transfers

No data records returned

Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name

No data records returned

Community

Demographic Profile of Surrounding Area (1-Mile Radius)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2022 American Community Survey (ACS) 5-year Summary and are accurate to the extent that the facility latitude and longitude listed below are correct. Census boundaries and demographic data for U.S. Territories are based on the "2020 Island Areas Demographic Profiles" from the U.S. Census Bureau. EPA's spatial processing methodology considers the overlap between the selected radii and ACS census block groups in determining the demographics surrounding the facility. For more detail about this methodology, see the DFR Data Dictionary <https://epa.gov/help/reports/dfr-data-dictionary#demographic>.

General Statistics (ACS (American Community Survey))	
Total Persons	6,075
Population Density	1,947/sq.mi.
Housing Units in Area	2,635
Percent People of Color	98%
Households in Area	2,189
Households on Public Assistance	87
Persons With Low Income	5,079
Percent With Low Income	84%

Geography	
Radius of Selected Area	1 mi.
Center Latitude	18.073661
Center Longitude	-67.018914
Total Area	3.121 sq.mi.
Land Area	100%
Water Area	0%

Income Breakdown (ACS (American Community Survey)) - Households (%)	
Less than $15,000	945 (43.19%)
$15,000 - $25,000	392 (17.92%)
$25,000 - $50,000	595 (27.19%)
$50,000 - $75,000	175 (8%)
Greater than $75,000	81 (3.7%)

Age Breakdown (ACS (American Community Survey)) - Persons (%)	
Children 5 years and younger	214 (4%)
Minors 17 years and younger	1,061 (17%)
Adults 18 years and older	5,014 (83%)
Seniors 65 years and older	1,476 (24%)

Race Breakdown (ACS (American Community Survey)) - Persons (%)	
White	4,075 (67%)
African-American	186 (3%)
Hispanic-Origin	5,974 (98%)
Asian	0 (0%)
Hawaiian/Pacific Islander	34 (1%)
American Indian	0 (0%)
Other/Multiracial	1,168 (19%)

Education Level (Persons 25 & older) (ACS (American Community Survey)) - Persons (%)	
Less than 9th Grade	538 (12.22%)
9th through 12th Grade	395 (8.97%)
High School Diploma	1,855 (42.13%)
Some College/2-year	403 (9.15%)
B.S./B.A. (Bachelor of Science/Bachelor of Arts) or More	853 (19.37%)

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

Memorandum to File

Date: October 9, 2025

Hannah Danek

From: Hannah Danek

CDBG-MIT Program
FER Program, Grant number B-18-DP-72-0002
Puerto Rico Department of Housing

Application Number: PR-FER-00660
Project: Leonardo Estrada Ferrer Leonardo Estrada Ferrer

Re: Justification for the Infeasibility and Impracticability of Radon Testing

After reviewing Application Number PR-FER-00660 under the Re-Grow PR Urban-Rural Agriculture Program, administered by the Puerto Rico Department of Housing (**PRDOH**), to complete the property's contamination analysis in accordance with 24 C.F.R. § 50.3(i) and 24 C.F.R. § 58.5(i), we have determined that testing the property's radon levels is infeasible and impracticable.

Per the U.S. Department of Housing and Urban Development's (**HUD**) CPD Notice 23-103, the recommended best practices and alternative options for radon testing are infeasible and impracticable in this case due to the following reasons:

- As required by the CPD Notice 23-103, the scientific data reviewed in lieu of testing must consist of a minimum of ten documented test results over the previous ten years. If there are less than ten documented results over this period, it is understood that there is a lack of scientific data. The latest report for radon testing in Puerto Rico was prepared in 1995 by the U.S. Department of the Interior in Cooperation with the U.S. Environmental Protection Agency. No other completed studies and reports on radon testing are available in Puerto Rico.

- There is no available science-based or state-generated information for Puerto Rico for the last ten years that can be used to determine whether the project site is in a high-risk area. The Department of Health and Human Services, Centers for Disease Control and Prevention (**CDC**), National Environmental Public Health Tracking, and Radon Testing map do not include Puerto Rico data.
- There are only two (2) licensed professionals in Puerto Rico who can conduct radon testing using the American National Standards Institute/American

Association of Radon Scientists and Technologists (**ANSI/AARST**) testing standards, which makes it difficult, time-consuming, and highly expensive to coordinate and secure a site visit for the contamination evaluation.

- Do-it-yourself (**DIY**) radon test kits are known to be unreliable in assuring and controlling the quality of the test results; they are not readily available in Puerto Rico, and the cost and time required for purchasing and sending them for analysis are unreasonable when weighed against the results' reliability and the need for prompt results.
- Local authorities in Puerto Rico do not have the specialized radon monitoring equipment or trained staff needed to conduct the radon testing analysis and ensure proper quality control and quality assurance practices are adhered to. We also do not have a radiation laboratory certified for radon testing.

As part of the evaluation for this determination, PRDOH sent information requests to six (6) local agencies at the state and federal levels. We received responses from the following agencies:

- United States Geological Survey;
- Centers for Disease Control and Prevention;
- Puerto Rico Department of Health; and
- United States Environmental Protection Agency.

The agencies mentioned above confirmed the lack of scientific data on Radon testing for Puerto Rico and the technical difficulties that we face to comply with HUD's Radon testing requirement. For the above-mentioned reasons, Radon testing is infeasible and impracticable for this property, and no further consideration of Radon is needed for the environmental review.

Radon
Attachments

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

August 20, 2024

Mrs. Carmen R. Guerrero Pérez
Director
Caribbean Environmental Protection Division
City View Plaza II – Suite 7000
#48 Rd. 165 km 1.2
Guaynabo, PR 00968-8069

Via email: guerrero.carmen@epa.gov

RE: Request for Information regarding available data on radon testing and levels within Puerto Rico

The Puerto Rico Department of Housing (PRDOH) kindly requests your assistance in gathering data, information, or reports related to radon testing in Puerto Rico, as this information is crucial for our compliance with the U.S. Department of Housing and Urban Development (HUD) Community Planning and Development (CPD) Notice CDP-23-103.

This Notice emphasizes the importance of radon testing and mitigation in ensuring safe living environments, particularly in HUD-assisted properties. PRDOH, as the grantee of the Community Development Block Grant for Disaster Recovery and Mitigation (CDBG-DR/MIT), is responsible for ensuring compliance with environmental requirements under CDBG-DR/MIT programs. To fulfill our obligations under this Notice, we must compile comprehensive and up-to-date information on radon levels, testing practices, and any mitigation efforts within the islands of Puerto Rico.

Specifically, we are seeking for possible availability of the following information:

Radon testing data – Results from radon testing conducted within your agency's purview, including details on location, testing methods, and recorded radon levels.

Reports and assessments – Any reports, studies, or assessments your agency has produced or commissioned that address radon testing or mitigation.

Policies and guidelines – Information or any policy, guideline, or protocol your agency follows concerning radon testing, exposure limits, or mitigation.

Historical data – if available, historical data or trends in radon levels within the regions you monitor that may impact HUD-assisted housing.

This information is vital to ensure that our radon management strategies are practical and compliant with federal requirements. If some of this information may be sensitive or confidential, we are prepared to discuss any necessary agreements or protocols for sharing this data securely.

Please let us know if you require additional details or have any questions regarding this request. We would greatly appreciate your response by September 15, 2024, so we can incorporate this data into our ongoing compliance efforts.

Thank you in advance for your cooperation and support. We look forward to working together on this critical initiative.

Sincerely,

William O. Rodríguez Rodríguez, Esq.
Secretary

Cc:
Mr. Oleg Povetko, Povetko.Oleg@epa.gov
Mr. Matthew Laurita, laurita.matthew@epa.gov

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

August 20, 2024

Dr. Silvina Cancelos
Professor
College of Engineering
University of Puerto Rico – Mayagüez Campus
259 Norte Blvd. Alfonso Valdés Cobián
Mayagüez, Puerto Rico

Via email: silvina.cancelos@upr.edu

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Barbosa Ave. #606, Building Juan C. Cordero Dávila, Río Piedras, PR 00918 | PO Box 21365 San Juan, PR 00928-1365
Tel. (787) 274-2527 | www.vivienda.pr.gov

CDBG-DR/MIT Program
Request for Information in relation with HUD CPD-23-103 for Puerto Rico
Page 2 / 2

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Sincerely,

William O. Rodríguez Rodríguez, Esq.
Secretary

Cc:
Dr. Carlos Marín, carlos.marin3@upr.edu

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

August 20, 2024

Dr. Jessica Irizarry
Director
Office of Island Affairs
U.S. Centers for Disease Control and Prevention
1324 Cll Canada, San Juan, 00920
Guaynabo, PR 00968-8069

Vía email: OIA@cdc.gov

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Secretary

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

August 20, 2024

Mrs. Anaís Rodríguez
Secretary
Puerto Rico Department of Natural Resources
Carretera 8838, km. 6.3, Sector El Cinco,
Río Piedras San Juan, PR 00926

Vía email: anais.rodriguez@drna.pr.gov

RE: Request for information regarding available data on radon testing and levels within Puerto Rico

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Secretary

Cc:
Mr. Luis Márquez, secretariaaire@drna.pr.gov
Eng. Amarilys Rosario, aire@drna.pr.gov
Mrs. Elid Ortega, eortega@drna.pr.gov

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

August 20, 2024

Dr. Carlos R. Mellado López
Secretary
Puerto Rico Department of Health
PO Box 70184
San Juan, PR 00936-8184

Vía email: drcarlos.mellado@salud.pr.gov

RE: Request for Information regarding available data on radon testing and levels within Puerto Rico

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Secretary

Cc:
Mr. Raúl Hernández Doble, rhernandez2@salud.pr.gov

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

August 20, 2024

Mrs. Holly Weyers
Regional Director, Southeast – Puerto Rico
US Geological Survey
3916 Sunset Ridge Road
Raleigh, NC 27607

Vía email: hsweyers@usgs.gov

RE: Request for Information regarding available data on radon testing and levels within Puerto Rico

The Puerto Rico Department of Housing (PRDOH) kindly requests your assistance in gathering data, information, or reports related to radon testing in Puerto Rico, as this information is crucial for our compliance with the U.S. Department of Housing and Urban Development (HUD) Community Planning and Development (CPD) Notice CDP-23-103.

This Notice emphasizes the importance of radon testing and mitigation in ensuring safe living environments, particularly in HUD-assisted properties. PRDOH, as the grantee of the Community Development Block Grant for Disaster Recovery and Mitigation (CDBG-DR/MIT), is responsible for ensuring compliance with environmental requirements under CDBG-DR/MIT programs. To fulfill our obligations under this Notice, we must compile comprehensive and up-to-date information on radon levels, testing practices, and any mitigation efforts within the islands of Puerto Rico.

Specifically, we are seeking for possible availability of the following information:

Radon testing data – Results from radon testing conducted within your agency's purview, including details on location, testing methods, and recorded radon levels.

Reports and assessments – Any reports, studies, or assessments your agency has produced or commissioned that address radon testing or mitigation.

Barbosa Ave. #606, Building Juan C. Cordero Dávila, Río Piedras, PR 00918 | PO Box 21365 San Juan, PR 00928-1365
Tel. (787) 274-2527 | www.vivienda.pr.gov

CDBG-DR/MIT Program
Request for Information in relation with HUD CPD-23-103 for Puerto Rico
Page 2 / 2

Policies and guidelines – Information or any policy, guideline, or protocol your agency follows concerning radon testing, exposure limits, or mitigation.

Historical data – if available, historical data or trends in radon levels within the regions you monitor that may impact HUD-assisted housing.

This information is vital to ensure that our radon management strategies are practical and compliant with federal requirements. If some of this information may be sensitive or confidential, we are prepared to discuss any necessary agreements or protocols for sharing this data securely.

Please let us know if you require additional details or have any questions regarding this request. We would greatly appreciate your response by September 15, 2024, so we can incorporate this data into our ongoing compliance efforts.

Thank you in advance for your cooperation and support. We look forward to working together on this critical initiative.

Sincerely,

William O. Rodríguez Rodríguez, Esq.
Secretary

Cc:
Mr. R. Randall Schumann, rschumann@usgs.gov

From: Charp, Paul (CDC/NCEH/DEHSP) <pac4@cdc.gov>
Sent: Tuesday, September 3, 2024 6:36 AM
To: Miranda, Sandra (CDC/PHIC/DPS); Irizarry, Jessica (CDC/PHIC/DPS); Rzeszotarski, Peter (CDC/NCEH/DEHSP); Vinson, D. Aaron (CDC/NCEH/DEHSP)
Cc: Kostak, Liana (CDC/PHIC/DPS); Vazquez, Germaine (CDC/NCEH/DEHSP)
Subject: RE: REHi: Puerto Rico Request for Information- Randon testing and levels

Good morning, Sandra and others,

In response to the request from Mr. William Rodriguez of the Department of Housing, Government of Puerto Rico, I have reviewed all the available data within the CDC National Environmental Public Health Tracking Network system for data related to radon in Puerto Rico. In addition to the tracking data available on the internet, I also reached out to Mr. Aaron Vinson of the NCEH Tracking Branch.

I was not able to find any data in the CDC systems and this was confirmed by Mr. Vinson. We also reached out the US Environmental Protection Agency who indicated they had no radon data in their systems. Please relay this information to Mr. Rodriguez in your response to his requests

If you have any additional questions, please contact me.

Thank you and best regards,

Paul A. Charp, Ph.D., Fellow, HPS
Senior Health Physicist
Emerging Environmental Hazards and Health Effects Branch (EEHHEB)
Division of Environmental Health Science and Practice (DEHSP)
National Center for Environmental Health (NCEH)
Centers for Disease Control and Prevention (CDC)
pcharp@cdc.gov
770-488-0723 office
404.388.0614 Cell

From: Schumann, R. Randall <rschumann@usgs.gov>
Sent: Wednesday, August 21, 2024 4:39 PM
To: Melanie Medina Smaine <mmedina@vivienda.pr.gov>; Weyers, Holly S <hsweyers@usgs.gov>
Cc: Elaine Dume Mejia <Edume@vivienda.pr.gov>; Luz S Colon Ortiz <Lcolon@vivienda.pr.gov>; Aldo A. Rivera-Vazquez <aarivera@vivienda.pr.gov>
Subject: RE: Request for Information- Radon testing and levels

Dear Ms. Medina Smaine,

In the early 1990s the U.S. Geological Survey (USGS) conducted geologic assessments of radon potential for all 50 states and the territories of Guam and Puerto Rico, in collaboration with the U.S. EPA. I conducted the geologic radon potential assessment for Puerto Rico. The PDF file of the report is too large to attach to this message but it can be obtained at https://pubs.usgs.gov/of/1993/0292k/report.pdf. The USGS did not conduct indoor radon testing and we did not conduct field studies associated with this assessment; it was based on existing data. Mr. David Saldana of the Puerto Rico Department of Health kindly provided us with data for 610 homes that were tested for indoor radon by his agency between 1993 and 1995, which are summarized in the report. I am not aware of any other radon-related geologic studies conducted in the Commonwealth of Puerto Rico by the U.S. Geological Survey.

Best regards,

R. Randall Schumann
Scientist Emeritus
U.S. Geological Survey
Geosciences and Environmental Change Science Center
Denver, Colorado, USA
rschumann@usgs.gov
https://www.usgs.gov/staff-profiles/r-randall-schumann

From: Raul Hernandez Doble <rhernandez2@salud.pr.gov>
Sent: Wednesday, August 21, 2024 2:13:31 PM
To: Melanie Medina Smaine <mmedina@vivienda.pr.gov>; Dr. Carlos Mellado <drcarlos.mellado@salud.pr.gov>
Cc: Elaine Dume Mejia <Edume@vivienda.pr.gov>; Luz S Colon Ortiz <Lcolon@vivienda.pr.gov>; Aldo A. Rivera-Vazquez <aarivera@vivienda.pr.gov>; Mayra Toro Tirado <mtoro@salud.pr.gov>
Subject: RE: [EXTERNAL]Request for Information- Randon testing and levels

Good afternoon. Ms. Medina

I regret to inform that we do not have any recent information on radon testing, since we do not have a certified radiation laboratory certified for radon testing. There are companies that sell test kits available online that can be done and mailed to a testing laboratory. There are also lists of radon contractors and these companies that process radon testing cartridges with instructions, on the Environmental Protection Agency Indoor air Quality web page. The last radon study in Puerto Rico done by the PR Department of Health was done on the year 1993.

Raul Hernandez Doble
Director, Seccion Salud Radiologica
Division de Salud Ambiental
Secretaria Auxiliar para la Vigilancia y la Proteccion de la Salud Publica
rhernandez2@salud.gov.pr
Phone: (787)765-2929 ext. 3210

From: Reyes, Brenda <Reyes.Brenda@epa.gov>
Sent: Wednesday, September 18, 2024 11:48 AM
To: Cesar O Rodriguez Santos <cesarrodriguez@drna.pr.gov>; Maritza Rosa Olivares <maritzarosaolivares@drna.pr.gov>; Silvina Cancelos Mancini <silvina.cancelos@upr.edu>; Melanie Medina Smaine <mmedina@vivienda.pr.gov>
Cc: Elaine Dume Mejia <Edume@vivienda.pr.gov>; Luz S Colon Ortiz <Lcolon@vivienda.pr.gov>; Aldo A. Rivera-Vazquez <aarivera@vivienda.pr.gov>; Povetko, Oleg (he/him/his) <Povetko.Oleg@epa.gov>
Subject: RE: Request for Information- Randon testing and levels

Saludos.

La EPA esta trabajando una respuesta a su petición. Se sometió borrador a la directora y el subdirector para su aprobación y firma.

Brenda Reyes Tomassini
Public Affairs
U.S. EPA
Region 2
Caribbean Environmental Protection Division
(787) 977-5869/(787) 977-5865
Mobile: 202-834-1290

From: Silvina Cancelos Mancini <silvina.cancelos@upr.edu>
Sent: Friday, September 6, 2024 15:04
To: Melanie Medina Smaine <mmedina@vivienda.pr.gov>
Cc: Elaine Dume Mejia <Edume@vivienda.pr.gov>; Luz S Colon Ortiz <Lcolon@vivienda.pr.gov>; Aldo A. Rivera-Vazquez <aarivera@vivienda.pr.gov>; Maritza Rosa Olivares <maritzarosaolivares@drna.pr.gov>; Reyes, Brenda <Reyes.Brenda@epa.gov>; Povetko, Oleg <Povetko.Oleg@epa.gov>
Subject: Re: Request for Information- Randon testing and levels

Estimada Melanie Medina
Quería dejarle saber que recibimos su correo el 21 de agosto al igual que el de Maritza Rosa el pasado 4 de septiembre. Ya las personas involucradas de EPA, junto conmigo y el Dr. Marín estamos al tanto del asunto y estamos trabajando para poder enviarles la información.

Atentamente

Silvina Cancelos
Professor
Associate Director
Mechanical Engineering Department
University of Puerto Rico - Mayaguez
Call BOX 9000 Mayaguez PR 00680
Tel: 787-832-4040 ext 5956
email: silvina.cancelos@upr.edu

Bubble Dynamics Lab
University of Puerto Rico - Mayagüez

EPA REGION 2
CARIBBEAN ENVIRONMENTAL PROTECTION DIVISION

September 23, 2024

VIA EMAIL

William O. Rodríguez Rodríguez, Esq.
Secretary
Puerto Rico Department of Housing
Barbosa Ave. 606 Building Juan C. Cordero
San Juan, PR 00917
Email: W.Rodriguez@vivienda.pr.gov

RE: EPA Response to August 20, 2024 request for information of data on radon testing and levels in Puerto Rico

Dear Honorable Secretary Rodríguez Rodríguez:

This communication is in response to your letter of August 20, 2024 addressed to the Puerto Rico Department of Natural and Environmental Resources (DNER) and referred to the U.S. Environmental Protection Agency (EPA) regarding available data on radon testing and levels within Puerto Rico.

EPA's National Radon Action Plan 2021–2025 sets a goal for the nation to find, fix and prevent high indoor radon levels in 8 million buildings by 2025 and prevent 3,500 lung cancer deaths per year. Under this Plan, leaders from across multiple sectors are working together to plan, guide, and sustain nationwide action to prevent exposure to radon.

Due to the lack of data in Puerto Rico, EPA undertook an investigation in collaboration with the University of Puerto Rico-Mayaguez (UPRM) Campus, Departments of Civil Engineering and Surveying and Mechanical Engineering, to find out if radon presented a problem in Puerto Rico. Up until 2021, the only data we had for Puerto Rico was a 1993-1995 mail-in radon screening study referred to by the U.S. Geological Survey report (USGS, 1995) in which the USGS concluded that several areas of Puerto Rico have the geologic potential to generate indoor radon levels exceeding the EPA Action Level of 4 pCi/L (picocuries per liter), perhaps locally reaching very high levels above 50 pCi/L, if a house construction and ventilation allow for soil-gas radon to enter and concentrate within the structure.[1] According to the USGS report, most of these areas are located in the northwest part of the island. Please note that the actual 1993-1995 study documentation is not available to the EPA.

Typical radon testing technology used in mainland United States (charcoal canisters or electric-powered devices) are impractical in Puerto Rico because of high humidity and power outages. The recovery and rebuilding of communities following the aftermath of 2017 Hurricanes Irma and Maria presented an opportunity to develop radon prevention and mitigation strategies in 2019. Initially, EPA sampled indoor radon air in over 170 single-family residences in the municipalities of San Sebastian, Lares, Ciales, Arecibo, Morovis, Camuy, and Hatillo and later expanded the project to other municipalities such as Rincon, Aguada, Aguadilla, Isabela, Quebradillas, Barceloneta and Vega Baja. The quality assurance protocols were anchored in American National Standards Institute/American Association of Radon Scientists and Technologists (ANSI/AARST) standards of practice (ANSI/AARS, 2019). The sampling was designed in two stages: scoping and confirmatory sampling. The scoping sampling was conducted using Corentium Home (CH) electronic monitors and E-Perm systems. Locations measuring above the EPA Action Level of 4 pCi/L with CH were measured at the second stage of the sampling using RAD7 and Corentium Pro Continuous Radon Monitors (CRMs). Nationally certified radon sampling professionals led by one such professional from the UPRM conducted confirmatory sampling in the second stage. Also, during the study, the nationally certified radon mitigation professionals inspected several homes with elevated indoor radon levels.

Mapping radon in Puerto Rico proved to be a complicated endeavor given the COVID-19 pandemic in 2020. EPA and UPRM continue to work on the project, however, results have not been finalized, and no scientific report has been published yet. Unfortunately, EPA cannot share preliminary data at this time because it contains privileged information. Nevertheless, preliminary data from the study does show homes with levels over 4 pCi/L (EPA Action Level) that might need mitigation to protect the health of their inhabitants.

Although many states have developed laws and regulations governing radon disclosure, certification, and mitigation, Puerto Rico lacks legislation or mandatory radon testing provisions for new construction, remodeling, selling or buying homes. Given this loophole and aiming to answer your request, the EPA can provide information on Best Management Practices for sampling indoor radon in Puerto Rico.

[1] **Reference**: USGS. Geologic Radon Potential of Guam and Puerto Rico, Report 93-292-K. Washington, DC: USGS. Retrieved 9/11/2024, from https://pubs.usgs.gov/of/1993/0292k/report.pdf.

CITY VIEW PLAZA II BUILDING, 7TH FLOOR
ROUTE 165 GUAYNABO, PR 00968

If you have any questions or need any additional information, please contact me at 787-977-5865 or guerrero.carmen@epa.gov or have your staff contact Reyes, Brenda at reyes.brenda@epa.gov or (787) 977-5869.

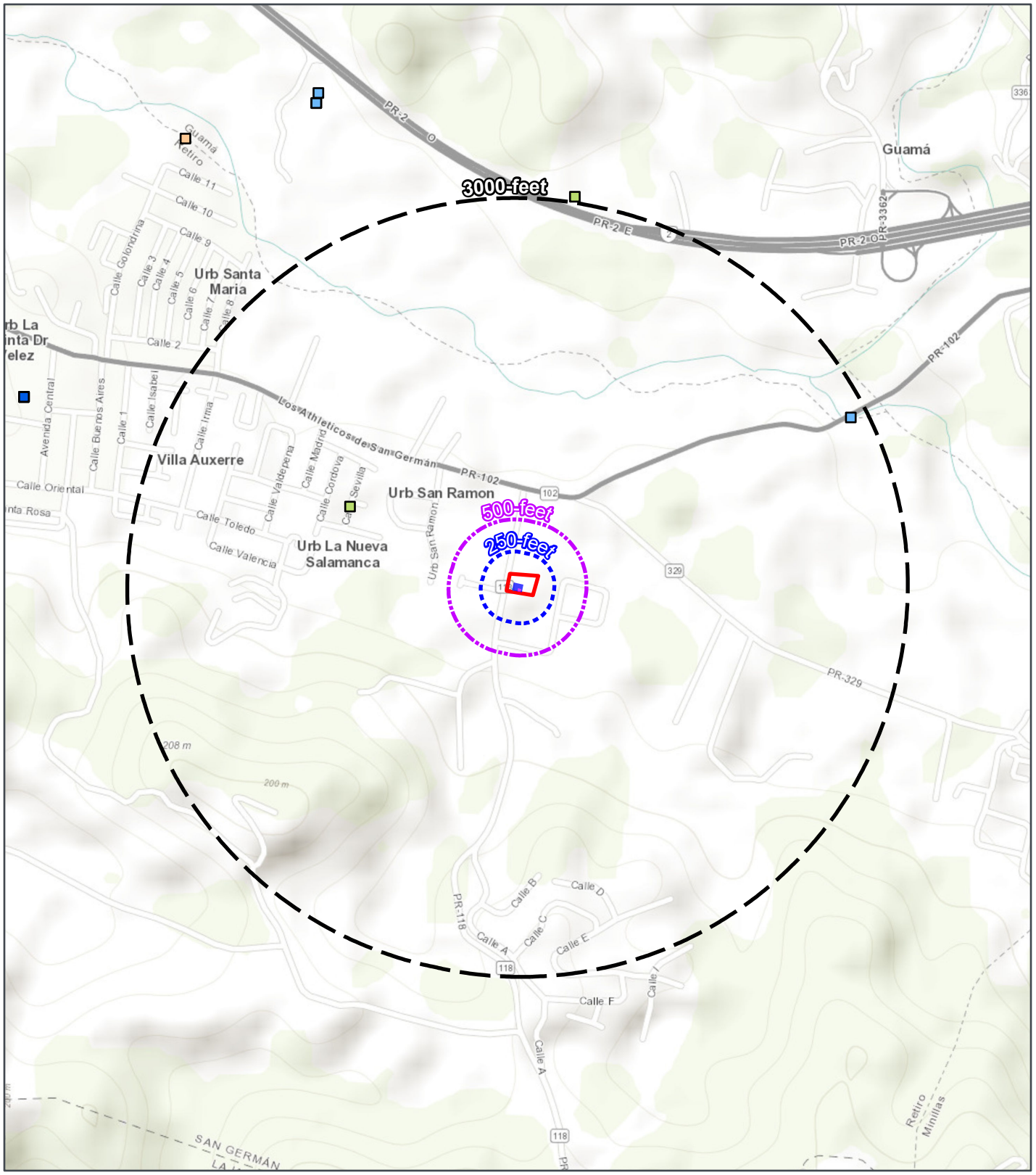
Sincerely,

CARMEN GUERRERO PEREZ

Digitally signed by CARMEN GUERRERO PEREZ
Date: 2024.09.23 09:41:39 -04'00'

Carmen R. Guerrero Pérez
Director

cc: Roberto Mendez, Esq (Acting Secretary, PR Department of Natural and Env. Resources)
Melany Medina: mmedina@vivienda.pr.gov
Elaine Dume Mejia: Edume@vivienda.pr.gov
Luz S Colon Ortiz: Lcolon@vivienda.pr.gov
Aldo A. Rivera-Vazquez: aarivera@vivienda.pr.gov
Cesar O. Rodriguez: cesarrodriguez@drna.pr.gov
Marita Rosa Olivares: maritzarosaolivares@drna.pr.gov



FER PROGRAM

Figure B 6-1: Contamination and Toxic Substances Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Battery/Inverter (within existing structure)
- Wall mounted Electric Meter
- Buffer (250-feet)
- Buffer (500-feet)
- Buffer (3000-feet)
- Air pollution
- Brownfields
- Hazardous waste
- Superfund
- Toxic releases
- Water dischargers

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
18.071954, -67.015141

Data Source: https://geopub.epa.gov/arcgis/rest/services/EMEF/efpoints/MapServer
Base Map: ESRI ArcGIS Online, accessed June 2025
Updated: 6/6/2025
Layout: Contamination and Toxic Substances

N

1:13,000

Puerto Rico

0 610 1,220 Feet

0 170 340 Meters

Attachment 7

Threatened and Endangered Species Consultation, USFWS IPaC Species List and Critical Habitat Map

SWCA
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.®

10245 West Little York Road, Suite 600
Houston, Texas 77040
Tel 281.617.3217 Fax 713.896.3189
www.swca.com

TECHNICAL MEMORANDUM

To: Caribbean Ecological Services Field Office
U.S. Fish and Wildlife Service
P.O. Box 491
Boquerón, Puerto Rico 00622

From: Sydney Moffat, Project Biologist on behalf of the Puerto Rico Department of Housing

Date: September 9, 2025

Re: **Threatened and Endangered Species Evaluation for the Puerto Rico Department of Housing FER PR-FER-00660 Project/ SWCA Project No. 78764**

Project Description

Application PR-FER-00660 is proposing to install a photovoltaic system (PVS), which includes solar panels, batteries, inverters, and electric wiring on a residential agricultural property. An existing electrical meter located on the western facing residence exterior will be used. The precise specifications of the installation and the PVS components, including the total number of each component, will be finalized by the installation team during the installation process. The area assessed for this environmental review is based on the overall footprint defined by the installation plans and is approximately 0.01 acre in area. Approximately 22 solar panels will be anchored to the roof of a structure situated in the southwestern area of the property. The concrete foundation and walls within the structure the PVS is constructed atop will support the installation of approximately 2 batteries and 1 invertor that will be wall mounted inside. All electrical wiring, if any, will be installed above-ground. No tree clearing or pruning will occur as a result of project activities. The project is located at Carretera 118 KM 4.8 Bo Retiro La Tea, San Germán PR 00683 (18.071954, -67.015141) in an urban area.

Existing Conditions

A site inspection on May 9, 2025, found the project area is located on an existing building surrounded by a mowed lawn within an urban area that does not require clearing of forested areas. There are no wetlands located in the project area or on the parcel therefore, no wetlands will be impacted. Representative photographs of the subject property are included in the Environmental Field Assessment Photographic Log (Appendix B).

Federally Protected Species

SWCA obtained a federal threatened and endangered species list from the USFWS (2025a) Information for Planning and Consultation ("IPaC") website for a 100-foot buffer around the PVS location (review area) (Appendix C). The IPaC automatically generates a list of species and other resources of concern, such as critical habitat, that are known or expected to be in the specified area and could potentially be directly or indirectly affected. According to the IPaC query for the project, one federally listed species has the potential

to occur in the review area; the endangered Puerto Rican boa (*Chilabothrus inornatus)*. There is no designated critical habitat within the review area but there is proposed critical habitat for the Puerto Rican skink (*Spondylurus nitidus*) (USFWS 2025b). Although the project overlaps with proposed critical habitat for the Puerto Rican skink, it will not be impacted because the project area is located on an existing structure on previously disturbed land. SWCA also evaluated the review area for potential habitat for bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) as they are protected by the Bald and Golden Eagle Protection Act of 1940 ("BGEPA"). The bald and golden eagle's range do not extend into Puerto Rico (Cornell Lab of Ornithology 2023); therefore, these species were eliminated from further analysis for this project. Table 1 identifies the species carried forward for further evaluation and summarizes each species' habitat requirements, potential for occurrence in the project area, and determination of effects.

Table 1. Federally Listed Species Range and/or Habitat Requirements

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area	Determination of Effects/Impacts
Reptiles				
Puerto Rican Boa (*Chilabothrus inornatus*)	FE	Considered to be a habitat generalist, the Puerto Rican boa tolerates a wide variety of terrestrial and arboreal habitats, including rocky areas, haystack hill, trees and branches, rotting stumps, caves, plantations, various types of forested areas such as karst and mangrove forests, forested urban and rural areas, and along streams and road edges (USFWS 2011).	*Unlikely to occur*. The proposed project area consists of an existing building.	*No effect*. There is no suitable habitat for the Puerto Rican boa in the project area.

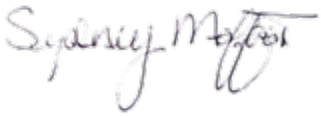
FE = Federally listed endangered; FT = Federally listed threatened

Based on a site visit and habitat evaluations, the Puerto Rican boa is considered unlikely to occur due to lack of suitable habitat within the project area. The boa was not observed during the site inspection, and neither was suitable habitat due the project area consisting of an existing structure. Therefore, the project will have *no effect* on federally listed species.

Conclusion: Based on the review of the project area and current available data, there is no designated critical habitat on the site (USFWS 2025b). The project overlaps with proposed critical habitat for the Puerto Rican skink but it will not be impacted due to the project area being an existing structure on previously disturbed land. Additionally, due to the location of the proposed project on previously disturbed land atop existing buildings, the likelihood of encountering the Puerto Rican boa (*Chilabothrus inornatus*) is considered extremely low. No listed species, critical habitat, or proposed critical habitat were observed on the roof or within the building during the site inspection where project activities will occur. Therefore, the proposed activity will have *no effect* on federally listed species or critical habitats. No further action under the Endangered Species Act is recommended at this time.

If you have any questions or require any additional information, please contact me at Sydney.Moffat@swca.com.

Sincerely,



Sydney Moffat
Biologist
SWCA Environmental Consultants

LITERATURE CITED

Cornell Lab of Ornithology. 2023. All About Birds. Available at: https://www.allaboutbirds.org/guide/. Accessed September 2025.

Puerto Rico Department of Natural and Environmental Resources. 2023. Puerto Rico DNER Species Ranges – under construction. Available at: https://arcg.is/1S9aju0. Accessed September 2025.

U. S. Fish and Wildlife Service (USFWS). 2011. *Puerto Rican Boa* (Epicrates inornatus) *5-Year Review: Summary and Evaluation*. U.S. Fish and Wildlife Service, Southeast Region. Boquerón, Puerto Rico. Accessed September 2025.

———. 2025a. Information for Planning and Consultation System (IPaC). Available at: http://ecos.fws.gov/ipac/. Accessed September 2025.

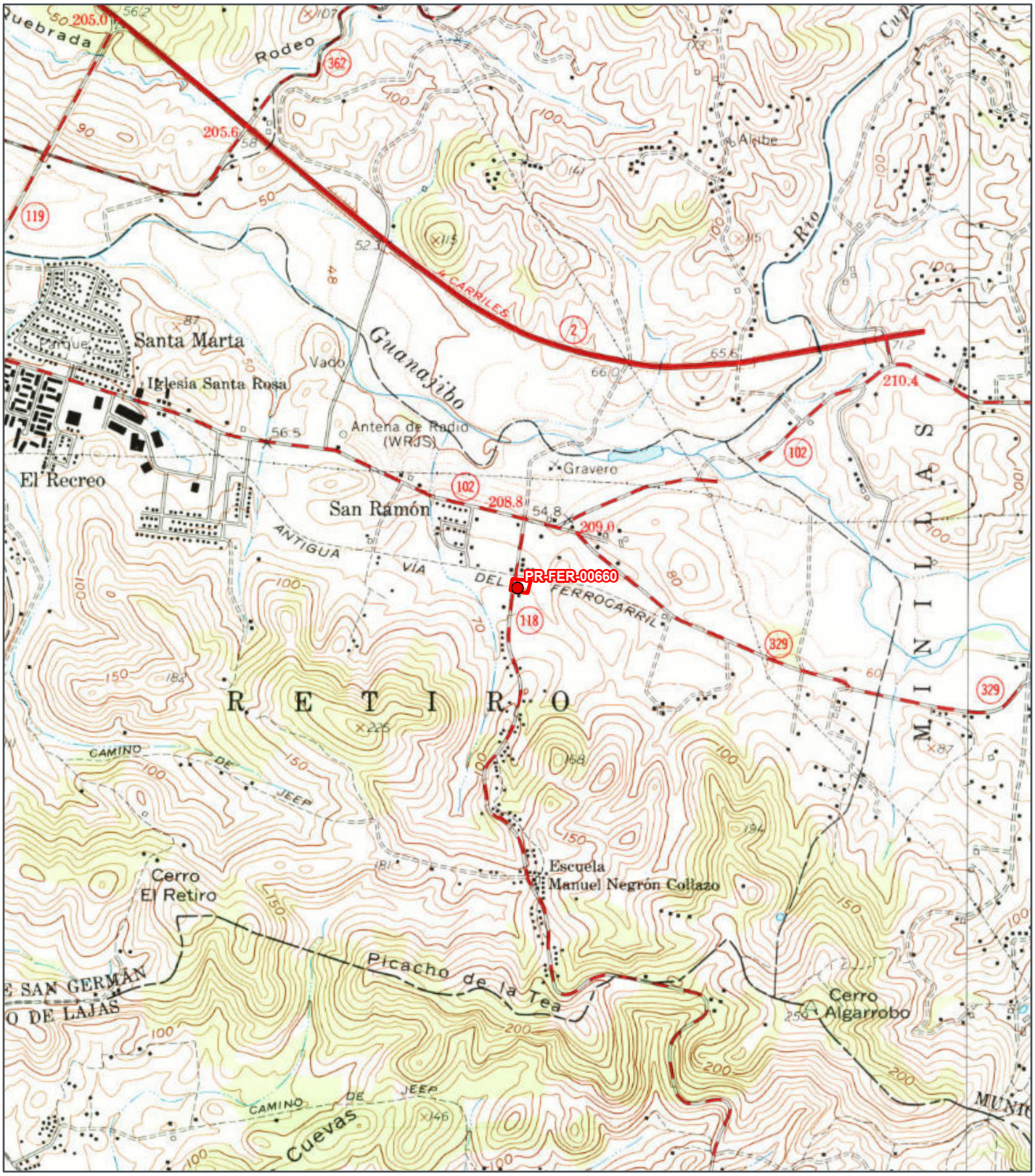
———. 2025b. Critical Habitat for Threatened & Endangered Species [USFWS]. Available at: https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77. Accessed September 2025.

APPENDIX A

Maps

Figure 1

USGS Topographic Map



FER PROGRAM

USGS Topographic Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

Site

Site Parcel

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
18.071954, -67.015141

Base Map: ESRI ArcGIS Online, accessed June 2025
Updated: 6/6/2025

Layout: USGS Topographic Map
Aprx: 78764_ferTier2Maps

N

1:20,000

Puerto Rico

0 940 1,880 Feet

0 260 520 Meters

Figure 2

Site Vicinity Map

FER PROGRAM

Site Vicinity

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Battery/Inverter (within existing structure)
- Wall mounted Electric Meter

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683

Parcel ID: 334-068-354-01-000
18.071954, -67.015141

Base Map: USA NAIP Imagery
Imagery Year: 2022
Updated: 6/6/2025

Layout: Site Vicinity
Aprx: 78764_ferTier2Maps

N

1:600

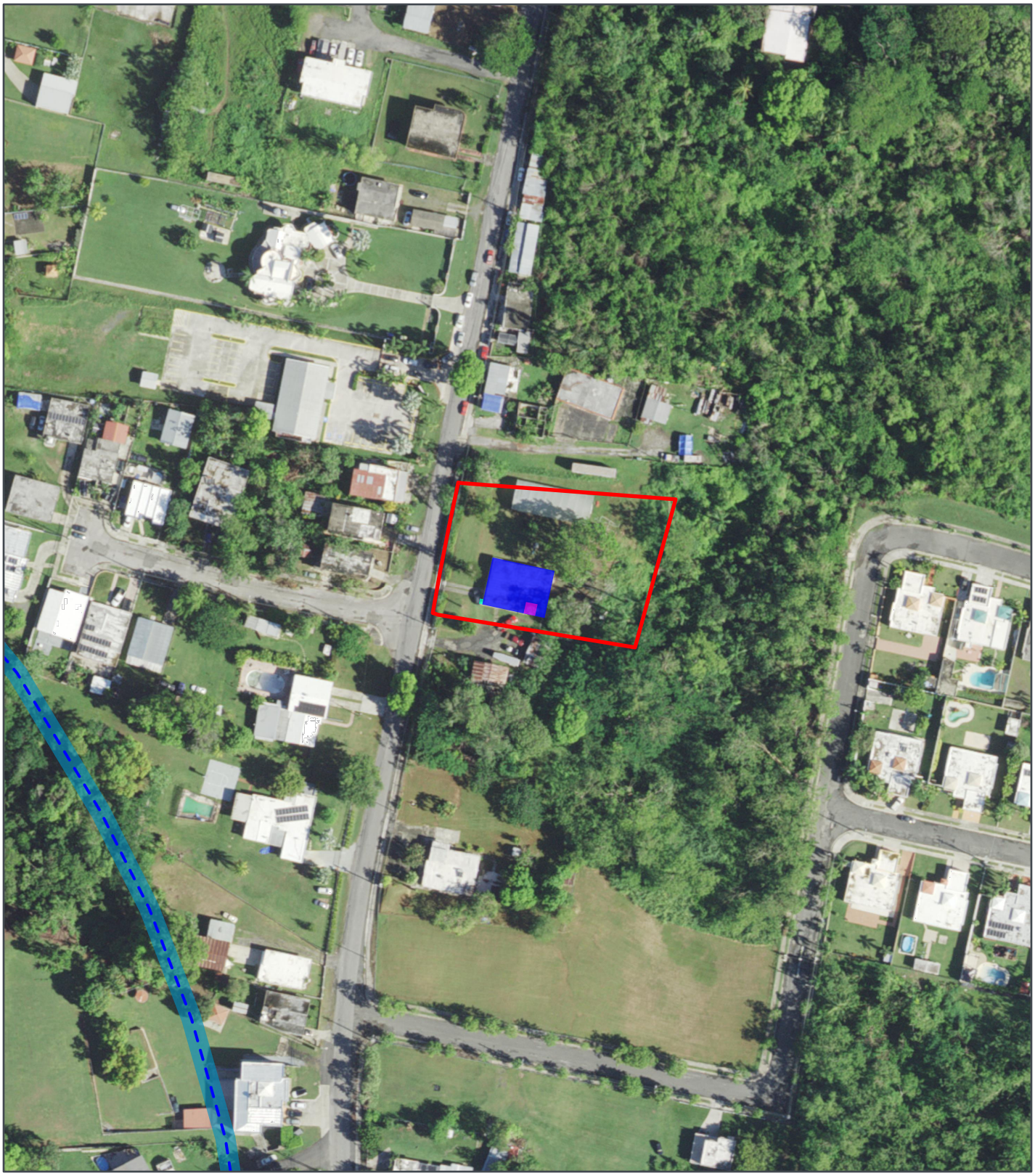
Puerto Rico

0 25 50 Feet

0 8 16 Meters

Figure 3

Wetlands Map



FER PROGRAM

Wetlands Protection Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Battery/Inverter (within existing structure)
- Wall mounted Electric Meter
- NHD Stream
- NHD Waterbody
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000

18.071954, -67.015141

Data Source: https://apps.nationalmap.gov/downloader/#/ https://www.fws.gov/program/national-wetlands-inventory/data-download
Base Map: USA NAIP Imagery
Imagery Year: 2022
Updated: 6/6/2025
Layout: Wetlands Protection

N

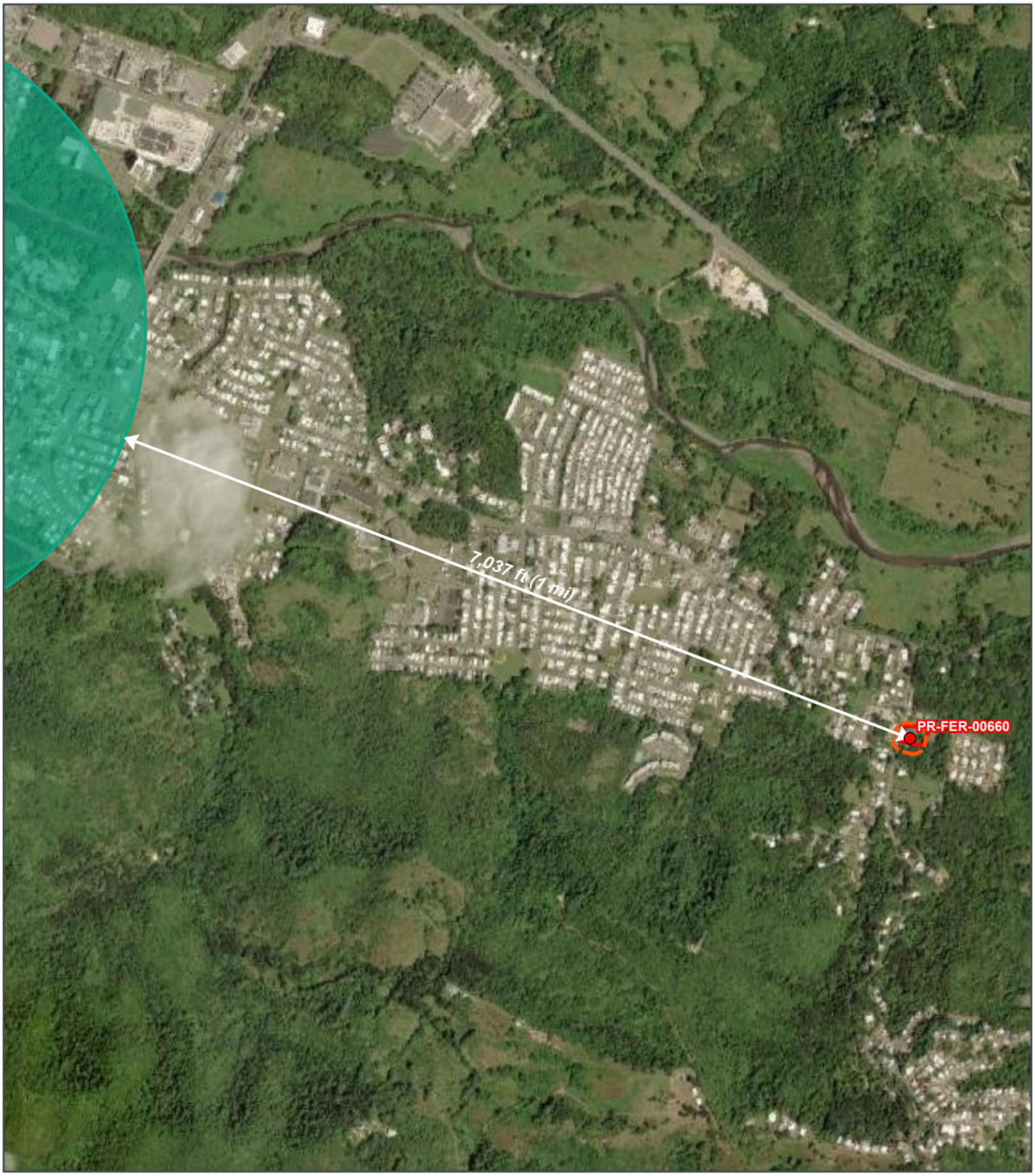
1:1,700

Puerto Rico

0 75 150 Feet
0 20 40 Meters

Figure 4

Critical Habitat Map



FER PROGRAM

Critical Habitat Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site
- Site Parcel
- Buffer (100-ft)
- Critical Habitat - Final
- National Wildlife Refuges

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000

18.071954, -67.015141

Data Source: https://services.arcgis.com/QVENGdaPbd4LUkLV/arcgis/rest/services/USFWS_Critical_Habitat/
Base Map: ESRI ArcGIS Online, accessed June 2025
Updated: 6/6/2025
Layout: Critical Habitat
Aprx: 78764_ferTier2Maps

N

1:14,000

Puerto Rico

0 660 1,320 Feet

0 180 360 Meters

APPENDIX B

Photographic Log

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 01	**Date:** May 09, 2025
Photo Direction: Southeast	
Description: This picture overviews the front of the property.	

Photo #: 02	**Date:** May 09, 2025
Photo Direction: East	
Description: This picture overviews the front of the property from a right angle and the area on the roof where the solar panels will be installed.	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 03	**Date:** May 09, 2025
Photo Direction: South	
Description: This picture overviews the front of the property from a left angle.	

Photo #: 04	**Date:** May 09, 2025
Photo Direction: Southeast	
Description: This picture overviews the left side of the property.	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 05	**Date:** May 09, 2025
Photo Direction: East	
Description: This picture overviews the plant nursery located on the left side of the property.	

Photo #: 06	**Date:** May 09, 2025
Photo Direction: North	
Description: This picture overviews the left side of the plant nursery and a pool.	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 07	**Date:** May 09, 2025
Photo Direction: Southwest	
Description: This picture overviews the chicken cage located on the left side of the property.	

Photo #: 08	**Date:** May 09, 2025
Photo Direction: Northwest	
Description: This picture overviews one connected 400-gallon water tank (left) and one connected 200-gallon water tank (right), both located at the back of the property.	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 09	**Date:** May 09, 2025
Photo Direction: South	
Description: This picture overviews one connected 1,000-gallon water tank located at the back of the plant nursery.	

Photo #: 10	**Date:** May 09, 2025
Photo Direction: South	
Description: This picture overviews the electric cables located at the entrance of the property	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 11	**Date:** May 09, 2025
Photo Direction: North	
Description: This picture overviews the wall mounted meter located on the right side of the property.	

Photo #: 12	**Date:** May 09, 2025
Photo Direction: Southeast	
Description: This picture overviews the septic system located at the back of the property.	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 13	**Date:** May 09, 2025
Photo Direction: Northwest	
Description: This picture overviews the room where the batteries will be installed.	

Photo #: 14	**Date:** May 09, 2025
Photo Direction: South	
Description: This picture overviews the right side of the property from a left angle and the open parking area.	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 15	**Date:** May 09, 2025
Photo Direction: Northeast	
Description: This picture provides an overview of the wetland area, which, according to the National Wetlands Inventory (NWI), is located approximately 460 feet from the project footprint, but there will be no impact on the wetlands.	

APPENDIX C

USFWS Information for Planning and Consultation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Caribbean Ecological Services Field Office
Post Office Box 491
Boqueron, PR 00622-0491
Phone: (939) 320-3135 Fax: (787) 851-7440
Email Address: CARIBBEAN_ES@FWS.GOV

In Reply Refer To: 07/08/2025 18:34:48 UTC
Project Code: 2025-0118992
Project Name: PR-FER-00660

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

THE FOLLOWING SPECIES LIST IS NOT A SECTION 7 CONSULTATION. PLEASE CONTACT OUR OFFICE TO COMPLETE THE CONSULTATION PROCESS

The purpose of the Endangered Species Act (Act) is to provide a means whereby threatened, and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect those species and/or their designated critical habitat.

Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action". The enclosed species list provides information to assist with the U.S. Fish and Wildlife Service (Service) consultation process under section 7 of the Act. However, **the enclosed species list does not complete the required consultation process.** The species list identifies threatened, endangered, proposed and candidate species, as well as proposed and designated critical habitats, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. A discussion between the Federal agency and the Service should include what types of listed species may occur in the proposed action area and what effect the proposed action may have on those species. This process initiates informal consultation.

Once a species list is obtained for the proposed project, an effect determination for endangered and threatened species should be made. The applicant could make an effect determination by using available keys on IPaC for specific species. For species with no determination keys, the applicant should request concurrence from the Service by sending a project package

to caribbean_es@fws.gov. To obtain guidance for completing this process and the minimum requirements for project packages, please visit:

https://www.fws.gov/sites/default/files/documents/consultation-under-section-7-of-the-endangered-species-act-with-the-caribbean-ecological%20Services-field-office-template-letter.pdf

When a federal agency, after discussions with the Service, determines that the proposed action is not likely to adversely affect any listed species, or adversely modify any designated critical habitat, and the Service concurs, the informal consultation is complete, and the proposed project moves ahead. If the proposed action is suspected to affect a listed species or modify designated critical habitat, the Federal agency may then prepare a Biological Assessment (B.A.) to assist in its determination of the project's effects on species and their habitat. However, a B.A. is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a B.A. where the agency provides the Service with an evaluation on the likely effects of the action to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a B.A. are described at 50 CFR 402.12.

If a federal agency determines, based on its B.A. or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to further consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation process. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species.

This list is provided pursuant to Section 7 of the Endangered Species Act and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action". Please use this list to determine whether your project requires consultation and to make your effects determination. For more guidance, use the Guideline for Consultation under Section 7 of the Endangered Species Act with the Caribbean Ecological Services Field Office by clicking here.

This species list is provided by:

Caribbean Ecological Services Field Office
caribbean_es@fws.gov
Post Office Box 491
Boqueron, PR 00622-0491
(786) 244-0081

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Caribbean Ecological Services Field Office
Post Office Box 491
Boqueron, PR 00622-0491
(939) 320-3135

PROJECT SUMMARY

Project Code: 2025-0118992
Project Name: PR-FER-00660
Project Type: Disaster-related Grants
Project Description: The proposed project involves installing a photovoltaic system, which includes solar panels, batteries, inverters, and electric wiring on a residential agricultural property. An existing electrical meter located on the western facing residence exterior will be used. The area assessed for this environmental review is based on the overall footprint defined by the installation plans and is approximately 0.01 acre in area. Approximately 22 solar panels will be anchored to the roof of a structure situated in the southwestern area of the property. The concrete foundation and walls within the structure the PVS is constructed atop will support the installation of approximately 2 batteries and 1 invertor that will be wall mounted inside. All electrical wiring, if any, will be installed above-ground. No tree clearing or pruning will occur as a result of project activities.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@18.071943500000003,-67.01516336910633,14z

Counties: San Germán County, Puerto Rico

ENDANGERED SPECIES ACT SPECIES

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

REPTILES

NAME	STATUS
Puerto Rican Boa *Chilabothrus inornatus*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6628
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/TFYYTDGCQNB2JGHC7QKHGSQ4PA/documents/generated/7159.pdf

CRITICAL HABITATS

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Puerto Rican Skink *Spondylurus nitidus*	Proposed

For information on why this critical habitat appears for your project, even though Puerto Rican Skink is not on the list of potentially affected species at this location, contact the local field office.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (MBTA). Any person or organization who plans or conducts activities

that may result in impacts to Bald or Golden Eagles, or their nests, should follow appropriate regulations and implement required avoidance and minimization measures, as described in the various links on this page.

The data in this location indicates that no eagles have been observed in this area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the Supplemental Information on Migratory Birds and Eagles document to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine if eagles may be present (e.g. your local FWS field office, state surveys, your own surveys).

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO FWS MIGRATORY BIRDS OF CONCERN WITHIN THE VICINITY OF YOUR PROJECT AREA.

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

Agency: SWCA
Name: Sydney Moffat
Address: 567 Bishop Gate Ln
City: Jacksonville
State: FL
Zip: 32204
Email sydney.moffat@swca.com
Phone: 9043435561

APPENDIX D

Quote

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

PROGRAMA CDBG-MIT

Programa de Resiliencia Agrícola y Energética

COTIZACION DEL SISTEMA DEL PROYECTO

EMPRESA DE INSTALACION DE ENERGIA RENOVABLE

Nombre de la Empresa:	**Nombre del Representante:**
Ion Leed, LLC.	Elvin Camacho Gonzalez

INFORMACION DEL SOLICITANTE

Nombre del Solicitante:	**Nombre del Negocio:**
Leonardo Estrada Ferrer	Leonardo Estrada Ferrer

Dirección de la propiedad:	**Municipio:**	**Código postal:**
CAR 118 K4 H7 BO RETIRO TEA SAN GERMAN PR 00683		

Coordenadas de la propiedad (proporcione hasta seis decimales)

Latitud 18.071954 **Longitud** -67.015141

CONSUMO ENERGETICO DE LA PROPIEDAD

Consumo energético anual (basado en el consumo de los últimos 12 meses, según lo reflejado en la factura del servicio eléctrico o en la información proporcionada en el estudio de carga computado en kWh diarios).

11800 kWh

Capacidades del sistema existente (si aplica):

Capacidad del sistema fotovoltaico		**Capacidad de almacenamiento de batería**	
N/A	kW	N/A	kWh

PROPUESTA DEL SISTEMA

Tipo de Sistema	**Costo Total**
Sistema fotovoltaico y almacenamiento en bateria nuevo (PVS+BSS)	$50,286.00

Capacidad del sistema fotovoltaico		**Capacidad de almacenamiento de batería**	
8.91	kW	37.0	kWh

Tipo de instalación sistema PVS (elija según aplique). Si ya existe una estructura que se utilizará para la instalación, se debe seleccionar la opción 'Montaje en techo existente'

- ☐ Montaje en estructura liviana nueva
- ☐ Montaje en poste
- ☐ Montaje en suelo
- ☑ Montaje en techo existente

Si la propiedad participante tiene una estructura existente y no se consideró el tipo de instalación en el techo como primera alternativa, explique el motivo del tipo de instalación propuesto a continuación:

COMPONENTES DEL SISTEMA PROPUESTO

		Capacidad x unidad	**Cantidad**
Paneles fotovoltaicos:			
Incluya marca y número de modelo	Q-Cell ML-G10+ 405	405	22
Baterías:			
Incluya marca y número de modelo	Fortress eVault Max 18.5kWh	18.5	2
Inversor / Controlador de Carga:	Fortress 10kW		
Incluya marca y número de modelo	Fortress FP-ENVY-10K	10000	1

	Capacidad x unidad	Cantidad
Otros: Incluya marca y número de modelo		
Otros: Incluya marca y número de modelo		
Otros: Incluya marca y número de modelo		

DESGLOSE DE COSTOS				
Descripción		**Monto Total**		**Retenido**
Trabajos Pre-Instalación				
Diseño del proyecto	$	2,946.00	$	589.20
Permisos	$	-	$	-
Otros:	$	-	$	-
Otros:	$	-	$	-
Otros:	$	-	$	-
Subtotal - Trabajos Pre-Instalación	**$**	**2,946.00**	**$**	**589.20**
Trabajos Civil				
Preparación del lugar	$	-	$	-
Estructuras de montaje / anclaje	$	3,713.00	$	742.60
Mitigación Ambiental[1]	$	-	$	-
Otros:	$	-	$	-
Otros:	$	-	$	-
Otros:	$	-	$	-
Subtotal - Trabajos Civil	**$**	**3,713.00**	**$**	**742.60**
Trabajos de Instalación				
Módulos PVS	$	5,465.00	$	1,093.00
Baterías	$	15,969.00	$	3,193.80
Inversor / Controlador de Carga	$	4,853.00	$	970.60
Cableado	$	7,001.00	$	1,400.20
Cuota Interconección	$	1,013.00	$	202.60
Otros: Labor	$	7,564.00	$	1,512.80
Otros: Materiales Adicional (Tubería, JBox,etc)	$	846.00	$	169.20
Otros: Materiales Adicional (Midclamp, Endclamp	$	916.00	$	183.20
Subtotal - Trabajos de Instalación	**$**	**43,627.00**	**$**	**8,725.40**
Pago de Retendio				
Monto Bruto Total	$	50,286.00		
Pagos Netos	$	40,228.80		
Total de Retenido	**$**	**10,057.20**		

[1] **PARA REIC SELECCIONADO - Una vez completada la revisión ambiental y, si el Reporte de Revisión Ambiental establece que se requieren medidas de mitigación, se solicitará una cotización actualizada para incluir los costos asociados con las obras de mitigación. Debe incluirse una cotización detallada del trabajo y el costo.**

DOCUMENTOS DE APOYO REQUERIDOS	
☑	**Factura de servicio eléctrico or Estudio de Carga Eléctrica.** Factura de servicio eléctrico para la propiedad participante, incluyendo el historial de consumo, o Estudio de Carga Eléctrica certificado por un Perito Electricista o Ingeniero Eléctrico Licenciado.
☑	**Cálculo de PVWatts.** Copia del Cálculo PVWatts de NREL para la propiedad participante mostrando la capacidad máxima del sistema fotovoltaico para satisfacer el consumo anual de energía del negocio.
☑	**Fotografías del Lugar del Proyecto.** Fotografías del lugar del proyecto incluyendo estructuras existentes. Si la propiedad tiene un sistema existente, las fotografías deben mostrar claramente la ubicación y cantidad de los componentes del PVS y BSS.
☑	**Dibujo esquemático.** Un dibujo esquemático mostrando la ubicación del equipo a instalar en la propiedad participante.

A mi leal saber y entender, el abajo firmante certifica que la Cotización del Sistema del Proyecto presentada cumple con los requisitos del Programa FER. El sistema del proyecto propuesto para instalar es nuevo y está debidamente certificado de acuerdo con la Sección IV del Reglamento No. 7796. La información anterior es precisa y la documentación de apoyo requerida está incluida con este formulario de Cotización del Sistema del Proyecto para la evaluación del Dept. de la Vivienda.

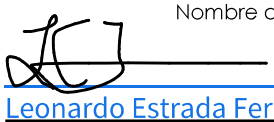
Certificado por: Elvin Camacho Gonzalez
Nombre del Representante de la Empresa

Elvin Camacho (Feb 26, 2025 11:16 AST)
Firma del Representante

2/25/2025
Fecha

El abajo firmante confirma que la Cotización del Sistema del Proyecto presentada es la seleccionada para la propiedad participante.

Certificado por: Leonardo Estrada Ferrer
Nombre del Solicitante



Leonardo Estrada Ferrer (Feb 26, 2025 13:00 AST)
Firma del Solicitante

2/25/2025
Fecha

INFORMACION SOBRE SISTEMA PROPUESTO

La siguiente información se utilizará en el proceso de evaluación ambiental inicial de requerirse alguna alteración del terreno para la instalación del

INSTRUCCIONE
S:

•Ambas preguntas deben ser contestadas.

• De contestarse que "SI" a alguna de las preguntas, es importante que se incluya la información/ documentación adicional solicitados.

¿Se instalarán nuevas líneas eléctricas en la propiedad participante?

- ☐ Si
- ☑ No

De contestar que SI, ¿serán aéreas o subterráneas?

- ☐ Aéreas
- ☐ Subterráneas - de ser así proveer:
  - ☐ imagen aérea indicando la ubicación propuesta.

¿Se vertirá una losa de concreto?

- ☐ Si
- ☑ No

De contestar que SI, proveer la siguiente información:

- ☐ Coordenadas de la ubicación de la losa: _____
- ☐ Medidas de la losa: _____
- ☐ Someter imagen aerea donde se muestre la ubicación de la losa

Completado por: Elvin Camacho Gonzalez
Nombre Representante de la Empresa Instaladora

Elvin Camacho (Feb 26, 2025 11:16 AST)
Firma del Representante

2/25/2025
Fecha

NREL

NATIONAL RENEWABLE ENERGY LABORATORY

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at //sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

The energy output range is based on analysis of 30 years of historical weather data, and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

12,915 kWh/Year*

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)
January	4.84	1,014
February	5.36	1,011
March	5.41	1,109
April	5.46	1,078
May	5.89	1,212
June	5.71	1,136
July	5.57	1,147
August	5.51	1,135
September	5.29	1,047
October	5.19	1,069
November	4.73	957
December	4.76	1,001
Annual	**5.31**	**12,916**

User Comments

Leonardo Estrada Ferrer

Location and Station Identification

Requested Location	18.071954, -67.015141
Weather Data Source	Lat, Lng: 18.09, -67.02 1.3 mi
Latitude	18.09° N
Longitude	67.02° W

PV System Specifications

DC System Size	8.91 kW
Module Type	Standard
Array Type	Fixed (roof mount)
System Losses	14.08%
Array Tilt	10°
Array Azimuth	180°
DC to AC Size Ratio	1.2
Inverter Efficiency	96%
Ground Coverage Ratio	0.4
Albedo	*From weather file*
Bifacial	No (0)
Monthly Irradiance Loss	Jan 0% Feb 0% Mar 0% Apr 0% May 0% June 0% July 0% Aug 0% Sept 0% Oct 0% Nov 0% Dec 0%

Performance Metrics

DC Capacity Factor	16.5%

FORTRESS POWER
Secure your energy

WHOLE HOME SOLAR STORAGE INVERTER

FORTRESS POWER ENVY 8/10K

- All-In-One Solution (PV, Generator, On/Off Grid)
- Max. 12kW PV Power Delivered to Battery & AC Outputs
- 8K (33.3A @ 240V, 38.5A @ 208V) Backup Power
  10k (41.6A @ 240V, 48A @ 208V) Backup Power
- Built-in APsmart Rapid Shutdown Transmitter and Button
- Built in 63 Amp AC Breakers for Grid in, Load & Generator
- Built in 250 Amp DC Battery Breaker

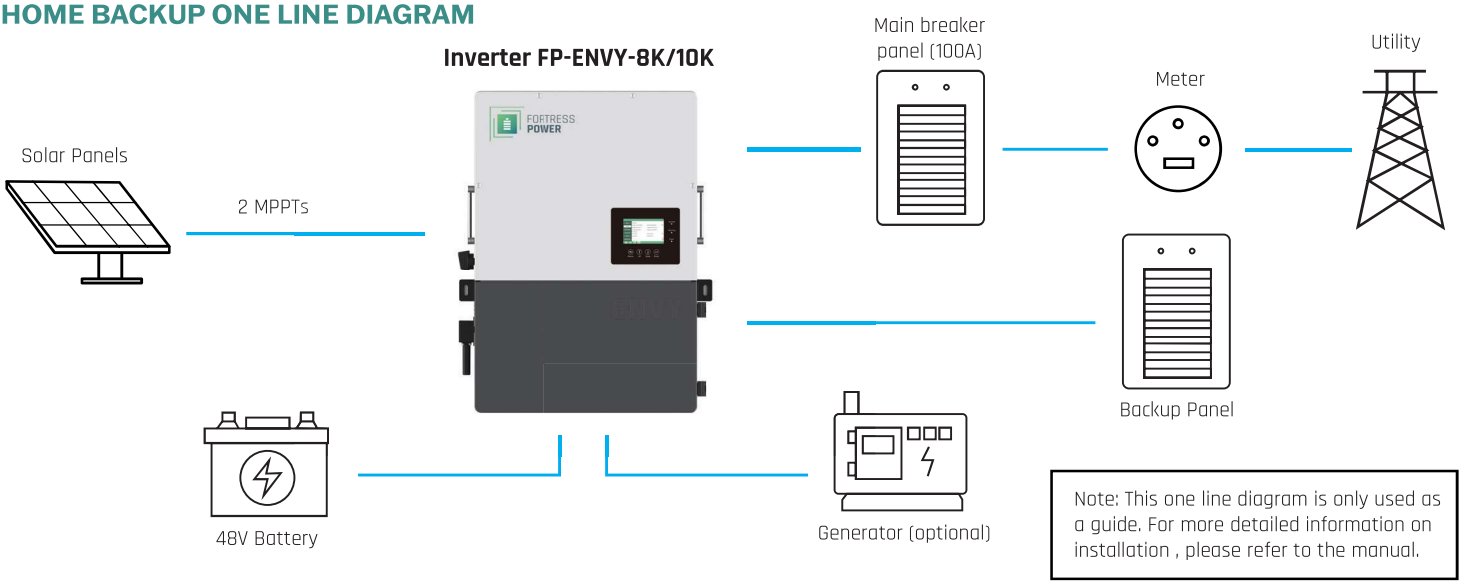
KEY FEATURES:

- IP65 rated for indoor & outdoor installations
- 8K: 2 MPPTs output for max Input 13KW PV array
  10K: 2 MPPTs output for max Input 15KW PV array
- AC, DC and AC/DC combined coupling
- 120/240V, 120/208V & 208V 3 Phase capable
- Built-in Generator Input
- 10 units in parallel
- Local and remote monitoring/app
- Color LCD touch screen
- Batch Settings

SUPPORTED APPLICATIONS:

- ✓ BACKUP
- ✓ OFF-GRID
- ✓ ZERO EXPORT
- ✓ TIME-OF-USE
- ✓ VIRTUAL POWER PLANT READY
- ✓ PEAK SHAVING
- ✓ NET METERING
- ✓ SMART LOAD
- ✓ MICROGRID

HOME BACKUP ONE LINE DIAGRAM



Note: This one line diagram is only used as a guide. For more detailed information on installation , please refer to the manual.

	FP-ENVY-8K	FP-ENVY-10K
Input DC (PV Side)		
Max. DC Input Power for Single MPPT	6000W / 6000W	6000W / 6000W
Max. PV Input Power	13000W	15000W
Max. PV Power Delivered to Battery & AC Outputs	12000W	12000W
DC Input Voltage Range	100V-600V (550V Max Recommended)	100V-600V (550V Max Recommended)
Nominal DC Input Voltage	360V	360V
Full Power MPPT Voltage Range	170V-500V	210V- 500V
Max. DC Input Current	25A / 25A	25A / 25A
Max. Short Circuit Input Current	31A / 31A	31A / 31A
MPPT Number/(Strings per MPPT)	2 / 2	2 / 2
Output/Input AC (Grid)		
Continuous AC Power to Grid	8000W (240V), 8000W (208V)	10000W (240V), 10000W (208V)
Continuous AC Power to Load w/ Grid or Generator	14400W (240V) AC Passthrough/ 12000W (240) GEN	14400W (240V) AC Passthrough/ 12000W GEN
Nominal Output Voltage	120V/240V, 120V/208V, 208V 3 Phase	120V/240V, 120V/208V, 208V 3 Phase
Max. Continuous AC Current	33.3A @ 240V, 38.5A @ 208V	41.6A @ 240V, 48A @ 208V
Nominal AC Frequency	50Hz/60Hz	50Hz/60Hz
Output AC (Off-Grid)		
Max. Output Power	8000W (240V), 8000W (208V)	10000W (240V), 10000W (208V)
Nominal Output Voltage	120V/240V	120V/240V
Nominal Output Frequency	50Hz/60hZ	50Hz/60hZ
Nominal Output Current	33.3A @ 240V, 38.5A @ 208V	41.6A @ 240V, 48A @ 208V
Peak Power	16kW / 500ms	20kW / 500ms
Switching Time	<20 ms	<20 ms
Dedicated Auto-start Generator Port	50A / 12kW	50A / 12kW
Battery Parameters		
Compatible Battery Type	eVault Max, eFlex, LFP-10 MAX, Other Lithium Batteries (Open-Loop), Lead Acid	eVault Max, eFlex, LFP-10 MAX, Other Lithium Batteries (Open-Loop), Lead Acid
Nominal Battery Voltage	48V	48V
Battery Voltage Range	40V-60V	40V-60V
Maximum Charging/Discharging Current	167A	210A
Maximum Charging/Discharging Power	8000W	10000W
Efficiency		
MPPT Efficiency	99.9%	99.9%
Max. Efficiency	97.5%	97.5%
CEC Efficiency	96.5%	96.5%
Protection		
Anti-islanding Protection	YES	YES
DC Switch	YES	YES
Ingress Protect Degree	NEMA 4X, IP65	NEMA 4X, IP65
SPD Protection	YES	YES
AFCI	YES	YES
RSD	Built-in APsmart Transmitter Also Compatible with Tigo Transmitters (refer to manual)	Built-in APsmart Transmitter Also Compatible with Tigo Transmitters (refer to manual)
General Data		
Dimensions	29.5 x 20.5 x 11.23 in (750 x 520 x 285 mm)	29.5 x 20.5 x 11.23 in (750 x 520 x 285 mm)
Weight	110 lbs (50 kg)	110 lbs (50 kg)
Display	Color Touch LCD	Color Touch LCD
Ambient Temperature Range	-13 to 140 °F (-25 to 60 °C)	-13 to 140 °F (-25 to 60 °C)
Cooling	FAN	FAN
Communication	RS485/Wi-Fi/CAN	RS485/Wi-Fi/CAN
Standard & Certification		
Certifications	UL1741, UL1741SB, IEEE1547A, rule 21, ISO-NE, FCC15 class B, HECO, CEC, Luma, SGIP, NOM	UL1741, UL1741SB, IEEE1547A, rule 21, ISO-NE, FCC15 class B, HECO, CEC, Luma, SGIP, NOM
Warranty	10 Years	10 Years

Intertek

FORTRESS POWER

eVault Max 18.5 Lithium Battery Storage

UL 9540
UL 9540A
UL 1973

FORTRESS POWER
Secure your energy

The newest innovative Lithium Iron Phosphate battery from Fortress Power is the eVault Max 18.5 kWh. An all-in-one solution for your residential and commercial needs. Scalable up to 370kWh with a serviceable top cover access to make installation of this battery simple and worry free. The eVault Max is AC/DC coupled to solar arrays and works for many applications that require solar storage, including Off-Grid, Back Up Power, Self-Supply, Peak Charge Reduction, and Demand Response, just to name a few.

We Provide You The Largest Single Residential Battery On The Market With Easy Installation!

- Safe Lithium Iron Phosphate Technology (LiFeP04)
- High Durability and Long-Lasting
- Closed Loop Communication with Inverters
- Scalable from 18.5 kWh - 370 kWh
- Intelligent Digital Processor Based Battery Management System (BMS)
- Advanced cell level monitoring and balancing
- IP55 Aluminum Industrial Grade Enclosure
- Touch screen LCD performance display

Electrical Specifications	
Nominal Voltage	51.2V
Nominal Capacity	360AH
Rated Capacity @ 0.5C (180A)	18.43 kWh
Resistance	<10 mΩ
Communication Protocol	CAN/RS485
Efficiency (at 0.5C)	98%
Cell Self-Discharge	<1 % / Month
Maximum Allowed Modules in Parallel	20 (370 kWh)
Depth of Discharge	Up to 100%
Warranty	10 Years
Cycle Life	8,000 (@ 80% DoD)

Charge Specifications	
Recommended Charge Current	150A
Maximum Charge Current	180A
Recommended Charge Voltage	54.4V
BMS Charge Voltage Disconnect	>56V

Discharge Specifications	
Recommended Continuous Discharge Rate	180A (9.2 KW)
Peak Discharge Rate	230A (12 KW 30 min)
Maximum Surge Power Rate	250A (12.8 kW 5 sec)
Recommended Low Voltage Disconnect	48V
Battery Low Voltage Protection	<46V
Battery Recovery Voltage	47V

Mechanical Specifications	
Dimensions: (L*W*H)	20.3" x 20.3" x 42.2" (515 x 515 x 1073mm)
Weight	520 lbs (235.87 kg)
Terminal Type	M10
Ring Terminal Size	1/2" or larger
Terminal Torque	7.0 - 7.7 Nm (5.1 - 5.7 ft - lb)
Case Material	Industrial Grade Aluminum
Enclosure Protection	IP55
Cell Type Chemistry	Tier 1 Automotive Prismatic - $LiFePO_4$

Compliance Specifications:	
Certifications	UL1642, UL1973, UL9540, UL9540A, CEC, SGIP
Shipping Classification	UN 38.3. UN 3480, Class 9

Basic Charging Profile	
Bulk + Absorb Charge	54.4V
Absorb Time	60 Minutes
Float Charge	54V
Inverter Charging	2 Stage / No Float
Equalization	No equalization (typical) 54.6V for 10 seconds (rare)
Temperature Compensation	None

Temperature Specifications	
Discharge Temperature	-4°F~140°F (-20°C ~ 60°C)
Charge Temperature	32°F ~ 120°F (0°C ~ 49°C)
Storage Temperature	6 months: 14°F ~ 77°F (-10°C ~ 25°C) 3 months: -4°F ~ 113°F (-20°C ~ 45°C)

ETL LISTED Intertek

Do not mix with lead acid batteries when recycling.

UN38.3 PASSED
Transport Safety Certified

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Sales@FortressPower.com · 877-497-6937

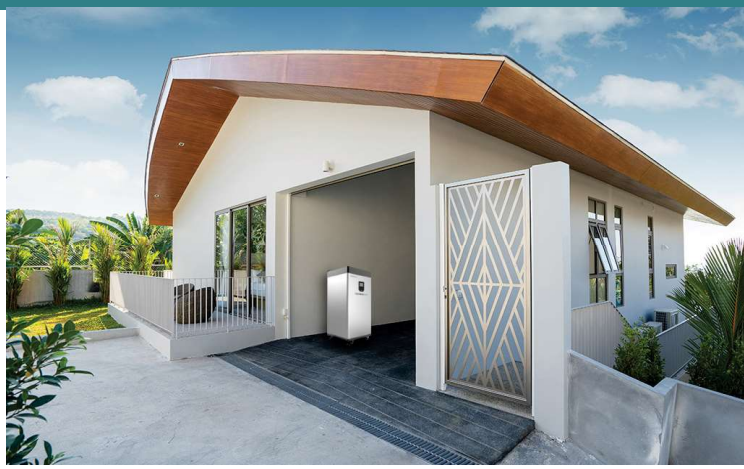
ABOUT FORTRESS POWER

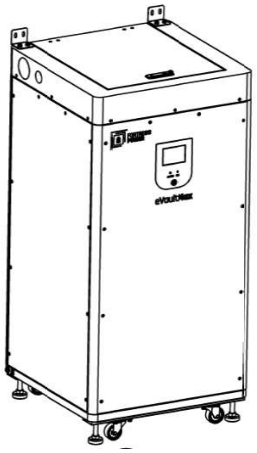
Fortress Power proudly services homes, businesses, utilities, telecom and transportation companies worldwide. Our Pennsylvania-based team's passion for clean energy storage has earned us a place among the world's top energy storage battery manufacturers.

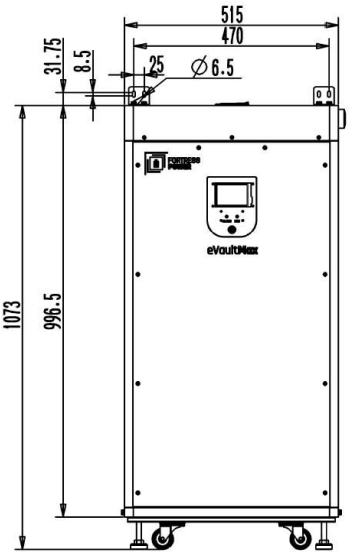
Our logistics centers located across the country offer easy distribution to all of our major markets. Fortress Power's high-performance solar lithium battery storage products are designed, engineered and inventoried along with live technical support in the United States.

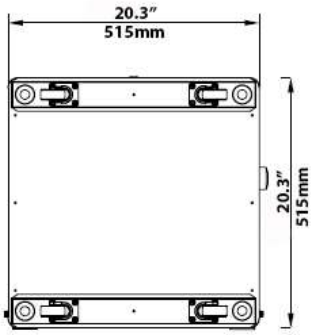
Fortress Power has partnered with industry leading lending institutions to help make your solar investment as easy as possible.

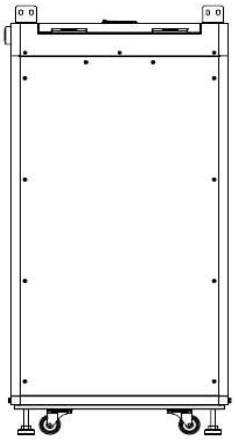
Please visit our website for purchasing and financing options.
www.fortresspower.com



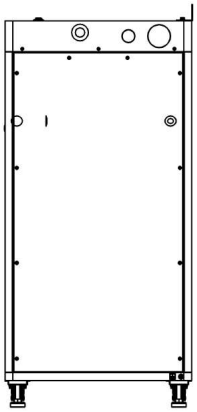




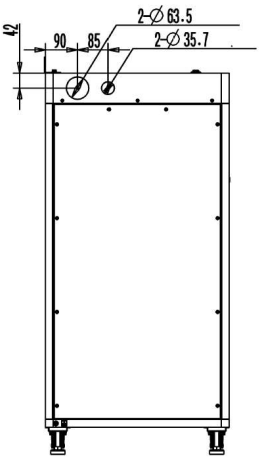




back view



side view



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FORTRESS POWER
Secure your energy

LATEST INVERTER INTEGRATION MANUAL

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Q.PEAK DUO BLK ML-G10+ SERIES

qcells

385 - 410 Wp | 132 Cells
20.9 % Maximum Module Efficiency

MODEL Q.PEAK DUO BLK ML-G10+

Breaking the 20 % efficiency barrier

Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.9 %.

A reliable investment

Inclusive 25-year product warranty and 25-year linear performance warranty[1].

Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology[2] and Hot-Spot Protect.

Extreme weather rating

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).

Innovative all-weather technology

Optimal yields, whatever the weather with excellent low-light and temperature behaviour.

The most thorough testing programme in the industry

Qcells is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.

[1] See data sheet on rear for further information.
[2] APT test conditions according to IEC/TS 62804-1:2015, method A (–1500 V, 96 h)

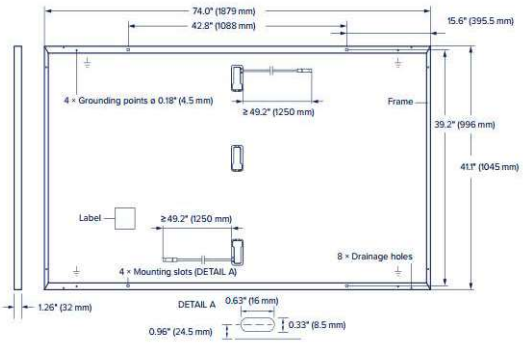
The ideal solution for:

Rooftop arrays on residential buildings

Q.PEAK DUO BLK ML-G10+ SERIES

Mechanical Specification

Format	74.0 in × 41.1 in × 1.26 in (including frame) (1879 mm × 1045 mm × 32 mm)
Weight	48.5 lbs (22.0 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 22 monocrystalline Q.ANTUM solar half cells
Junction box	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥ 49.2 in (1250 mm), (−) ≥ 49.2 in (1250 mm)
Connector	Stäubli MC4; IP68

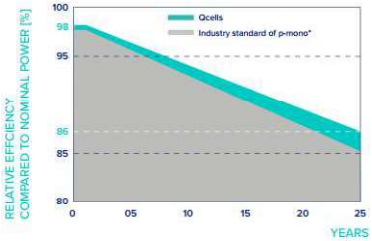


Electrical Characteristics

POWER CLASS			385	390	395	400	405	410
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / −0 W)								
Minimum	Power at MPP[1]	P_{MPP} [W]	385	390	395	400	405	410
	Short Circuit Current[1]	I_{SC} [A]	11.04	11.07	11.10	11.14	11.17	11.20
	Open Circuit Voltage[1]	V_{OC} [V]	45.19	45.23	45.27	45.30	45.34	45.37
	Current at MPP	I_{MPP} [A]	10.59	10.65	10.71	10.77	10.83	10.89
	Voltage at MPP	V_{MPP} [V]	36.36	36.62	36.88	37.13	37.39	37.64
	Efficiency[1]	η [%]	≥ 19.6	≥ 19.9	≥ 20.1	≥ 20.4	≥ 20.6	≥ 20.9
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[2]								
Minimum	Power at MPP	P_{MPP} [W]	288.8	292.6	296.3	300.1	303.8	307.6
	Short Circuit Current	I_{SC} [A]	8.90	8.92	8.95	8.97	9.00	9.03
	Open Circuit Voltage	V_{OC} [V]	42.62	42.65	42.69	42.72	42.76	42.79
	Current at MPP	I_{MPP} [A]	8.35	8.41	8.46	8.51	8.57	8.62
	Voltage at MPP	V_{MPP} [V]	34.59	34.81	35.03	35.25	35.46	35.68

[1]Measurement tolerances P_{MPP} ±3%; I_{SC}; V_{OC} ±5% at STC: 1000 W/m², 25±2 °C, AM 1.5 according to IEC 60904-3 • [2]800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY

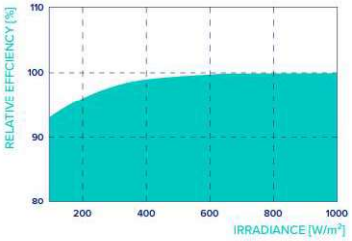


At least 98% of nominal power during first year. Thereafter max. 0.5% degradation per year. At least 93.5% of nominal power up to 10 years. At least 86% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

*Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	−0.27
Temperature Coefficient of P_{MPP}	γ	[%/K]	−0.34	Nominal Module Operating Temperature	NMOT	[°F]	109±5.4 (43±3 °C)

Properties for System Design

Maximum System Voltage	V_{SYS}	[V]	1000 (IEC) / 1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating		[A DC]	20	Fire Rating based on ANSI / UL 61730	TYPE 2
Max. Design Load, Push / Pull[3]		[lbs / ft²]	75 (3600 Pa) / 55 (2660 Pa)	Permitted Module Temperature on Continuous Duty	−40 °F up to +185 °F (−40 °C up to +85 °C)
Max. Test Load, Push / Pull[3]		[lbs / ft²]	113 (5400 Pa) / 84 (4000 Pa)		

[3] See Installation Manual

Qualifications and Certificates

UL 61730, CE-compliant,
Quality Controlled PV - TÜV Rheinland,
IEC 61215:2016, IEC 61730:2016,
U.S. Patent No. 9,893,215 (solar cells),

C Certified US UL 61730 CE TÜVRheinland CERTIFIED www.tuv.com ID 1111220277

Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.
Hanwha Q CELLS America Inc. 400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL hqc-inquiry@qcells.com | WEB www.qcells.com

qcells

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SOLARMOUNT is the professionals' choice for residential PV mounting applications. Every aspect of the system is designed for an easier, faster installation experience. **SOLAR**MOUNT is a complete solution with revolutionary universal clamps, **FLASHKIT** PRO, full system UL 2703 certification and 25-year warranty. Not only is **SOLAR**MOUNT easy to install, but best-in-class aesthetics make it the most attractive on any block!

New & Improved:

THE PROFESSIONALS' CHOICE

With Superior Aesthetics

NOW FEATURING FLASHKIT PRO

The Complete Roof Attachment Solution

FEATURING SHED & SEAL TECHNOLOGY

NOW WITH UNIVERSAL MIDCLAMPS

Accommodates 30mm-51mm module frames

One tool, one-person installs are here!

REVOLUTIONARY NEW ENDCLAMPS

Concealed design and included End Caps

THE PROFESSIONALS' CHOICE FOR RESIDENTIAL RACKING

BEST INSTALLATION EXPERIENCE • CURB APPEAL • COMPLETE SOLUTION • UNIRAC SUPPORT

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BETTER DESIGNS

TRUST THE INDUSTRY'S BEST DESIGN TOOL

Start the design process for every project in our U-Builder on-line design tool. It's a great way to save time and money.

BETTER SYSTEMS

ONE SYSTEM - MANY APPLICATIONS

Quickly set modules flush to the roof on steep pitched roofs. Orient a large variety of modules in Portrait or Landscape. Tilt the system up on flat or low slow roofs. Components available in mill, clear, and dark finishes to optimize your design financials and aesthetics.

BETTER RESULTS

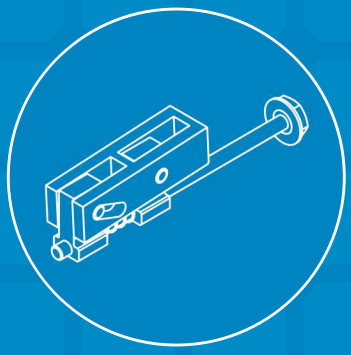
MAXIMIZE PROFITABILITY ON EVERY JOB

Trust Unirac to help you minimize both system and labor costs from the time the job is quoted to the time your teams get off the roof. Faster installs. Less Waste. More Profits.

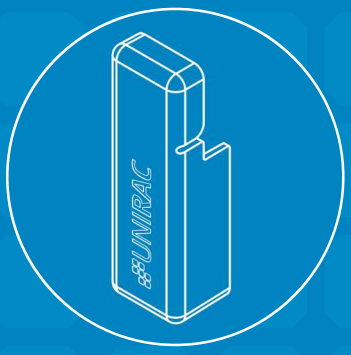
BETTER SUPPORT

WORK WITH THE INDUSTRIES MOST EXPERIENCED TEAM

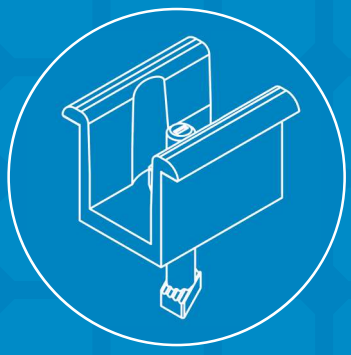
Professional support for professional installers and designers. You have access to our technical support and training groups. Whatever your support needs, we've got you covered. Visit Unirac.com/solarmount for more information.



CONCEALED UNIVERSAL ENDCLAMPS



END CAPS INCLUDED WITH EVERY ENDCLAMP



UNIVERSAL SELF STANDING MIDCLAMPS

U-BUILDER ONLINE DESIGN TOOL SAVES TIME & MONEY

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LISTED **UL2703**

BONDING & GROUNDING
MECHANICAL LOADING
SYSTEM FIRE CLASSIFICATION

UNIRAC CUSTOMER SERVICE MEANS THE HIGHEST LEVEL OF PRODUCT SUPPORT

UNMATCHED EXPERIENCE	CERTIFIED QUALITY	ENGINEERING EXCELLENCE	BANKABLE WARRANTY	DESIGN TOOLS	PERMIT DOCUMENTATION

TECHNICAL SUPPORT

Unirac's technical support team is dedicated to answering questions & addressing issues in real time. An online library of documents including engineering reports, stamped letters and technical data sheets greatly simplifies your permitting and project planning process.

CERTIFIED QUALITY PROVIDER

Unirac is the only PV mounting vendor with ISO certifications for 9001:2008, 14001:2004 and OHSAS 18001:2007, which means we deliver the highest standards for fit, form, and function. These certifications demonstrate our excellence and commitment to first class business practices.

BANKABLE WARRANTY

Don't leave your project to chance, Unirac has the financial strength to back our products and reduce your risk. Have peace of mind knowing you are providing products of exceptional quality. SOLARMOUNT is covered by a 25 year limited product warranty and a 5 year limited finish warranty.

ENHANCE YOUR REPUTATION WITH QUALITY RACKING SOLUTIONS BACKED BY ENGINEERING EXCELLENCE AND A SUPERIOR SUPPLY CHAIN

PUB2018AUG31 - PRINTED UPDATE

FOR QUESTIONS OR CUSTOMER SERVICE VISIT UNIRAC.COM OR CALL (505) 248-2702

Su factura de electricidad

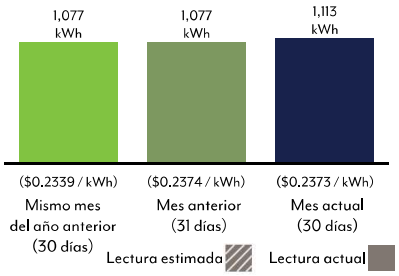
Para el periodo del 12 de septiembre de 2024 al 12 de octubre de 2024

MONE GARCIA,ALEXANDRA M
Su número de cuenta: 6333621000
Fecha de expedición de esta factura: 12 de octubre de 2024
Ciclo de facturación: 12

Consejo Para Ahorrar Energía: *¿Cuáles son los beneficios de ahorrar energía? Una factura más económica para usted y energía más confiable para todos. Si trabajamos juntos para reducir nuestro consumo energético, podremos reducir la demanda sobre la red. Esto ayudará a mantener las luces encendidas para todos. Para conocer más, visite: lumapr.com/residencial/ahorrando-energia-y-dinero.*

CANTIDAD TOTAL ADEUDADA	FECHA DE VENCIMIENTO	CONSUMO DE kWh
$264.12	14 nov 2024	1,113 kWh

SU CONSUMO DE ENERGÍA



COMPARACIÓN

Este mes, usted consumió:

3.3% más energía
en comparación con el mes anterior

y

3.3% más energía
en comparación con el año anterior

PROMEDIOS

Costo promedio por día
$8.80

Promedio de consumo diario
37 kWh

Costo promedio de 12 meses por kWh
$0.2323

¡En LUMA trabajamos para ti!

¿Necesita más tiempo para pagar su factura? Estamos aquí para ofrecerle soluciones, incluyendo planes de pago flexibles, que podrían estar disponibles para usted y su familia. Para más información, contacte a un representante de servicio al cliente hoy al 1-844-888-5862.

Transformación del sistema eléctrico

¡Cuídese y proteja a su familia de los estafadores! LUMA nunca lo llamará para solicitarle un pago por teléfono. Para más consejos, visite lumapr.com/combatiendoelfraude.

PARA EMERGENCIAS O INTERRUPCIONES EN EL SERVICIO
1-844-888-LUMA (5862)

DIRECCIÓN POSTAL DE LUMA:
PO BOX 363508
San Juan PR 00936-3508

PARA PAGOS Y CONSULTAS
1-844-888-LUMA (5862)

PARA FACTURACIÓN Y MÁS
WWW.LUMAPR.COM

LUMA Energy
PO BOX 363508
San Juan PR 00936-3508

Ley 57-2014, según enmendada: Todos los clientes tienen hasta la fecha de vencimiento para pagar la factura o presentar una objeción a los cargos en la factura. Detalles al dorso.

Incluya este talonario con su pago. No mutile, doble, grape, manche, escriba (excepto la cantidad a pagar) ni use cinta adhesiva en el talonario de pago.

Cuenta: 6333621000
Cantidad adeudada: $264.12
Fecha de vencimiento:
14 de noviembre de 2024

Cantidad incluida:

MONE GARCIA,ALEXANDRA M
PO BOX 3027
LAJAS PR 00667-3027

LS-10/12/24-9368

00063336210000 000026412 000026412 8

¿Cuáles son los cargos por su servicio eléctrico?

Los cargos por su servicio eléctrico incluyen los siguientes:

- Cargo por Cliente
- Cargo por Energía
- Cargo por Demanda (si es aplicable)
- Las Cláusulas de Reconciliación y Riders

Los Cargos por Cliente tienen el propósito de recuperar los gastos que son independientes del consumo y la demanda de energía de los clientes. Estos son:

- La lectura de contadores
- Facturación
- Gastos administrativos
- Servicios al cliente y
- Gastos relacionados con la toma de servicio y el medidor

Los Cargos por Energía y Demanda tienen el propósito de recuperar los gastos de:

- Generar, transmitir y distribuir la energía eléctrica

Las Cláusulas de Reconciliación y Riders están destinadas a recuperar gastos, subsidios, aportaciones y contribuciones aprobados por el Negociado de Energía que no se recuperan en los cargos anteriores. Es posible que estos cargos no apliquen a todos los tipos de clientes:

- Ajuste de Cargo por Compra de Combustible (FCA)
- Ajuste de Cargo por Compra de Energía (PPCA)
- Contribución en Lugar de Impuestos (CELI-CILTA)
- Subsidios Alumbrado Público (Municipal)
- Otras Subvenciones
- Cargo Eficiencia Energética (EE)
- Descuentos por Subsidios y
- Crédito Medición Neta (NM) (si es aplicable)

Para una lista completa y desglose detallado de estos cargos, visite la página web **www.lumapr.com** o visite las oficinas de servicio al cliente de LUMA.

Subsidios, Alumbrado Público (Municipal) y Otras Subvenciones

- Crédito por Consumo de Equipo Eléctrico Necesario Para Preservar la Vida
- Tarifa Servicio Residencial Para Proyectos Públicos – RH3
- Tarifa Servicio Residencial Especial – LRS (Programa de Asistencia Nutricional)
- Tarifa Fija para Residenciales Públicos bajo la Titularidad de la Administración de Vivienda Publica – RFR
- Subsidio de Combustible Residencial
- Alumbrado Público (Municipal)

Para una lista completa y desglose detallado de todos los Subsidios, visite la página web **www.lumapr.com** o visite las oficinas de servicio al cliente de LUMA.

Usted tiene el derecho de objetar y pedir una investigación de su factura.

Usted (cliente) tiene el derecho a objetar la cantidad facturada y solicitar una investigación de su factura. Si usted objeta o presenta una solicitud de investigación a tiempo, su servicio no será afectado. Usted tendrá hasta la fecha de vencimiento de su factura para pagarla o para presentar su objeción o solicitud de investigación.

Para poder objetar o solicitar una investigación, usted deberá pagar la cantidad correspondiente al promedio de las facturas que no han sido objetadas durante los seis (6) meses anteriores. En caso de que no haya un historial de facturas no objetadas de al menos seis (6) meses, usted deberá pagar la cantidad correspondiente al promedio de las facturas previas que no hayan sido objetadas. Si el promedio de las facturas anteriores no objetadas es mayor a la factura objetada, usted deberá pagar el monto de la factura objetada.

En caso de que la factura objetada sea la primera factura emitida en su cuenta, usted deberá pagar una suma equivalente al depósito requerido al momento de suscribir su contrato de servicio eléctrico con LUMA o el monto de la factura objetada, lo que sea menor. Usted puede presentar su solicitud de objeción o investigación de la factura de cualquiera de las siguientes maneras:

- Personalmente en la oficina de servicio al cliente más cercana
- A través de Mi LUMA en la página web **www.lumapr.com**
- Por teléfono a 1-844-888-LUMA (5862) Por correo al PO Box 9100, San Juan, PR 00908-9100

Negociado de Energía de Puerto Rico (NEPR)

Usted puede contactar al NEPR de cualquiera de las siguientes maneras:

- Accediendo a la Página Web www.energia.pr.gov
- Por teléfono al 787-523-6262
- Por correo electrónico a nepr@jrsp.pr.gov
- Por correo postal al Edificio World Plaza, 268 Avenida Muñoz Rivera, Nivel Plaza, Suite 202, San Juan, PR 00918

Oficina Independiente de Protección al Consumidor (OIPC)

La **OIPC** educa, orienta, asiste y representa a los consumidores de energía en Puerto Rico. Si tiene alguna situación con su proveedor de energía, puede contactar al **OIPC de cualquiera de las siguientes maneras:**

- A través de su sitio web www.oipc.pr.gov
- Por correo electrónico a **info@oipc.pr.gov**
- Por correo postal al 500 Ave. Roberto H. Todd San Juan, PR 00907-3941
- Por teléfono al 787-523-6962
- Por fax al 787-523-6961

Las horas de operación de la OIPC son de lunes a viernes de 8:30 am a 5 pm

Términos de Servicio

LUMA es regulada por el Negociado de Energía de Puerto Rico (NEPR). Como parte de los términos que rigen el servicio que se le provee a los clientes, el NEPR aprobó Términos de Servicio que incluyen un relevo de responsabilidad a la Autoridad de Energía Eléctrica y LUMA por ciertas pérdidas relacionadas con la operación del sistema de transmisión y distribución y el suministro de energía y electricidad. Estos Términos de Servicio requieren que LUMA haga todos los esfuerzos razonables para minimizar ciertos eventos de restricción, suspensión, interrupción o reducción de servicios en la medida que sea razonablemente posible, proveer un servicio eficiente y confiable a sus clientes y mantener la continuidad del servicio, pero no puede garantizar un suministro de electricidad ininterrumpido a sus clientes. Le exhortamos a que visite nuestra página de Internet en www.lumapr.com o una oficina de servicio al cliente para acceder a estos Términos de Servicio, dado que incluyen información importante y rigen situaciones que pudieran surgir con su cuenta o el servicio. En cualquier momento por favor contacte a LUMA para hablar de su servicio.

FORMAS DE PAGO

Para su conveniencia, LUMA ofrece varias formas de pago.

- Pague en línea a través de **www.lumapr.com**
- Llame a nuestra línea de pago automatizada al **1-844-888-LUMA (5862)**
- Envíe el pago por correo junto con el talonario provisto en esta factura
- Visite su oficina local de LUMA

SI TIENE UN BALANCE VENCIDO

Cuando hace pagos a tiempo, usted mantiene y protege su crédito. Los pagos parciales no evitarán la suspensión del servicio de energía eléctrica si todavía hay pagos en atraso y procede tal suspensión. Las cuentas que sean finales y que no se hayan pagado a tiempo, podrán ser referidas a una agencia de crédito, excepto por aquellos cargos en atraso que hayan sido debidamente objetados y estén bajo evaluación o adjudicación o para los cuales se esté cumpliendo con un plan de pago aprobado. Para pagar su balance vencido contáctenos al 1-844-888-LUMA (5862).

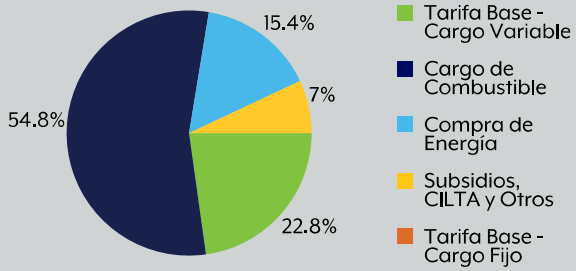
LS-10/12/24-9368

La instalación de un equipo para generar energía de fuentes renovables puede ayudarle a reducir su factura de electricidad y LUMA, mediante sus oficinas comerciales o por Internet, le suministrará información sobre cómo puede cualificar para ingresar al programa de medición neta. Además, existen beneficios contributivos para incentivar la compra de esos equipos sobre los que puede obtener más información en el Programa de Política Pública Energética.

DETALLE DE LA CUENTA

Balance		**$0.00**
Cantidad adeudada del periodo anterior	*$255.63*	
Pagos acreditados	*-$255.63*	
Cargos corrientes		**$264.12**
Cantidad Total Adeudada		**$264.12**

DESGLOSE DEL CARGO DE ELECTRICIDAD



Depósito(s) o bono(s) recibido(s): $100.00

INFORMACIÓN DEL MEDIDOR Y DEL SERVICIO

Dirección del servicio: CAR 118 K4 H7 BO RETIRO TEA SAN GERMAN PR 00683 **ID localidad:** 2206031556

Tarifa: Servicio Residencial General **Periodo:** 12-sep-2024 a 12-oct-2024 **Próxima lectura:** 12-nov

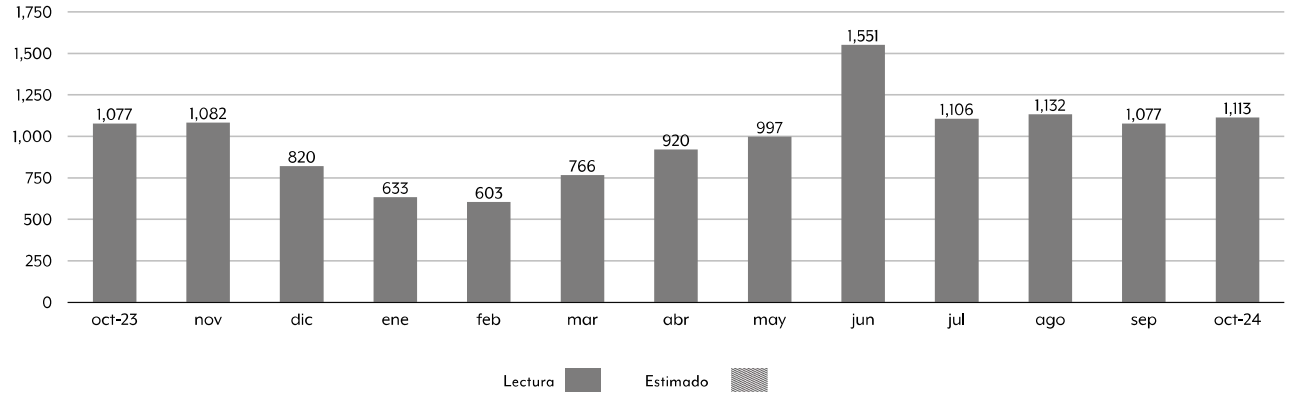
Número de contador	Fecha de lectura	Lectura actual	Fecha de lectura anterior	Lectura anterior	Consumo		Constante
					kWh	Días	
55124122	12-oct	77350.00 L	12-sep	76237.00	1,113.00	30	1

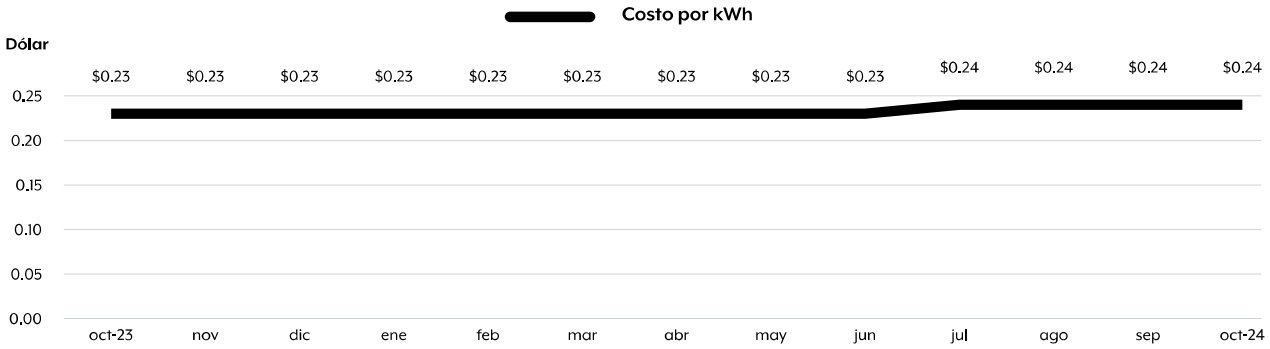
DETALLE DE LOS CARGOS CORRIENTES

DESCRIPCIÓN	TARIFA	CARGO
Cargos por Servicio		
Cargo por Cliente		$4.00
Cargo por Consumo	425 kWh x $0.04944	$21.01
Cargo por Consumo Adicional	688 kWh x $0.05564	$38.28
Subtotal		**$63.29**
Cláusulas de Reconciliación		
Cláusula FCA-Ajuste Cargo de Combustible	1,113 kWh x $0.128051	$142.52
Cláusula PPCA-Ajuste por Compra de Energía	1,113 kWh x $0.036023	$40.09
Cláusula CILTA-CELI (Municipios)	1,113 kWh x $0.003755	$4.18
Cláusula SUBA-Subsidios HH	1,113 kWh x $0.010847	$12.07
Cláusula SUBA-Subsidios NHH	1,113 kWh x $0.000916	$1.02
Cláusula EE-Cargo Eficiencia Energética	1,113 kWh x $0.000853	$0.95
Subtotal		**$200.83**
Total		**$264.12**

HISTORIAL DE CONSUMO (KWH)

ID localidad: 2206031556





Leonardo Estrada Ferrer

3XFM+2W6, PR-118, San Germán, 00683, Puerto Rico

8.91 kWp

(18.07195 , -67.01514)

Scan the QR code to view a 3D model of your roof with the PV system installed (or click the 'View 3D Model' button).

View 3D Model

Leonardo Estrada Ferrer

Arka 360

Generated on 11 Dec, 2024 | 10:39 AM

nazario@ionleed.com
787-381-2448

System Metrics

ANNUAL PRODUCTION	PERFORMANCE RATIO	SPECIFIC GENERATION
13.79	77.39%	1,547.90
x 1000 kWh (Units)		kWh/kWp/year

Module DC Nameplate

8.91 kWp

AC Nameplate

10.00 kW

DC-AC Ratio

0.89

Weather Dataset

Meteonorm

nazario@ionleed.com
787-381-2448

Components

Your installation uses latest technology in solar

Modules

Hanwha Q CELLS Q.PEAK DUO BLK ML-G10+(385-405)W Q.PEAK DUO BLK ML-G10+(405-405)W	22

Inverters

FP-ENVY-10K FORTRESS POWER	1

nazario@ionleed.com
787-381-2448

Expected Annual Production

During the first year of operations, your system is expected to produce 13.79 x 1000 kWh.

Expected average generation of the system

1,149.34 kWh/month

Yearly degradation rate

1.5%/year

Monthly Table

Months	Direct Irradiance (kWh/m2)	Diffused Irradiance (kWh/m2)	Effective Irradiance (kWh/m2)	DC Energy (kWh)	AC Energy (kWh)	Specific Generation	Performance Ratio
January	140.36	54.89	156.95	1,129.31	1,073.30	120.46	76.75
February	141.39	57.24	153.13	1,113.84	1,058.60	118.81	77.59
March	180.96	72.32	188.58	1,375.18	1,306.97	146.69	77.79
April	186.17	73.08	186.73	1,356.60	1,289.31	144.70	77.49
May	194.30	83.08	189.46	1,374.97	1,306.77	146.66	77.41
June	185.21	90.67	178.83	1,302.54	1,237.94	138.94	77.69
July	174.50	91.93	169.76	1,237.38	1,176.00	131.99	77.75
August	174.33	89.45	172.97	1,257.26	1,194.90	134.11	77.53
September	152.24	77.30	155.46	1,129.22	1,073.21	120.45	77.48
October	147.29	73.92	155.46	1,123.40	1,067.68	119.83	77.08
November	132.41	60.03	145.57	1,052.03	999.85	112.22	77.09
December	129.93	46.99	146.88	1,060.11	1,007.53	113.08	76.99
Annual	1,939.09	870.90	1,999.78	14,511.86	13,792.06	1,547.94	77.39

nazario@ionleed.com
787-381-2448

Field Segments

Name	Orientation	Tilt	Azimuth	Row Spacing	Frame Size	Modules	Power	Solar Access
Subarray #1	Portrait	10°	191.97°	0.4572 m	1x1	22	8.91 kWp	98.51%

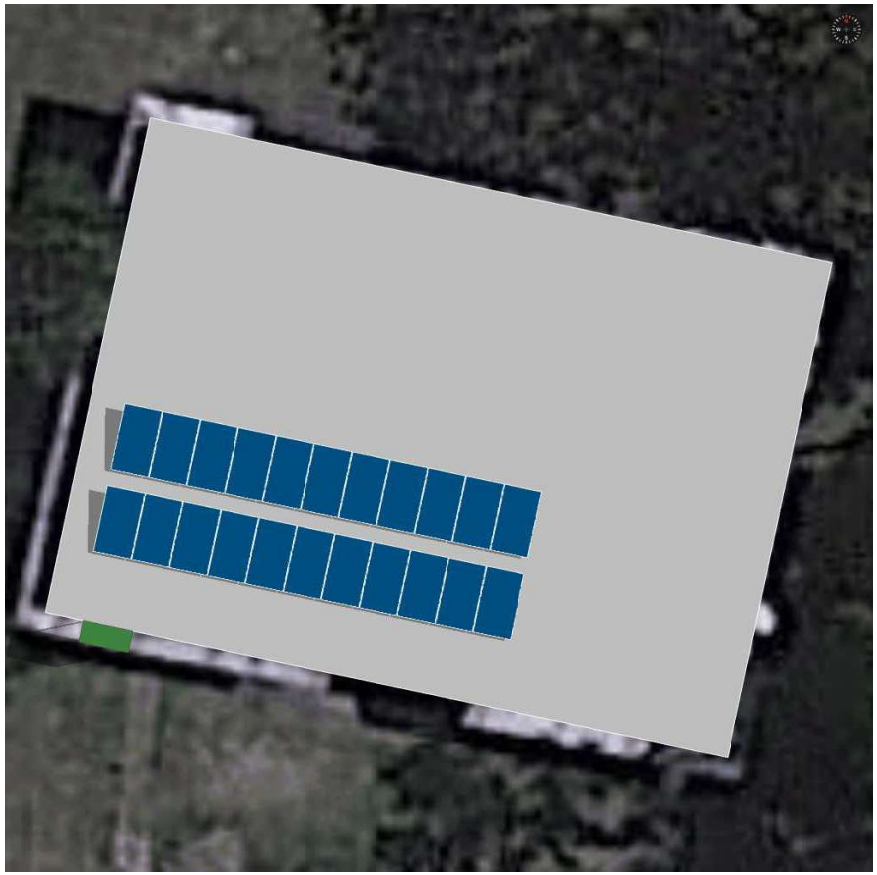
Monthly solar access (%) across arrays

Array	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	91	94	98	100	100	100	100	100	100	96	93	91

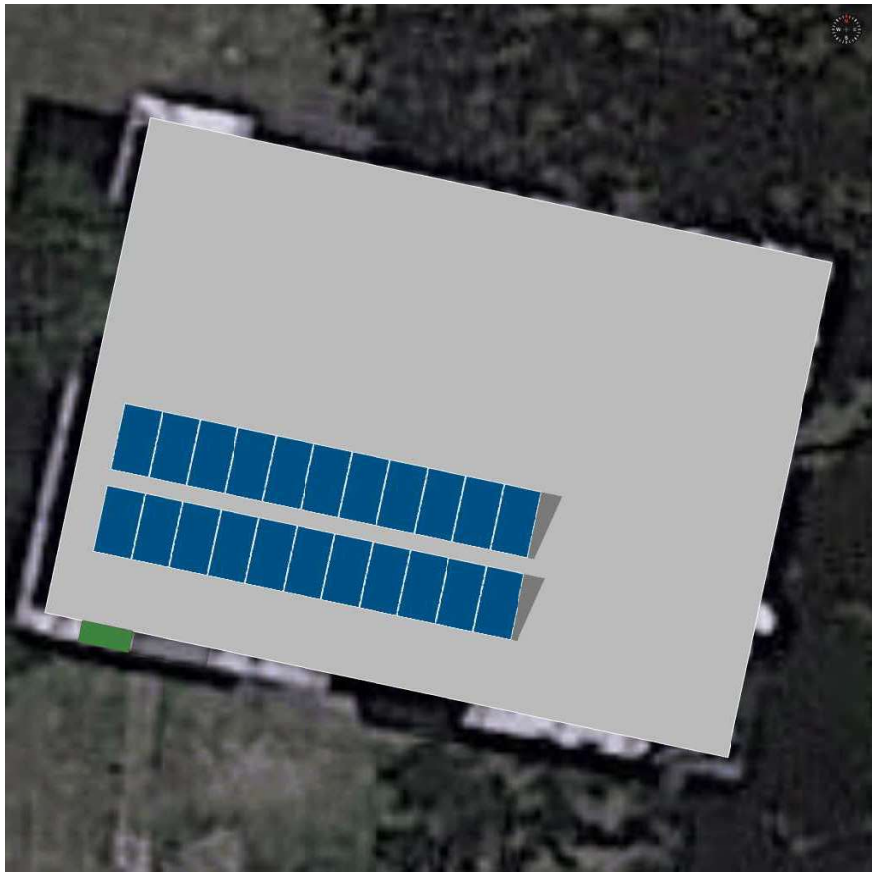
nazario@ionleed.com
787-381-2448

Shading Analysis

June 21 | 9:00:00 AM



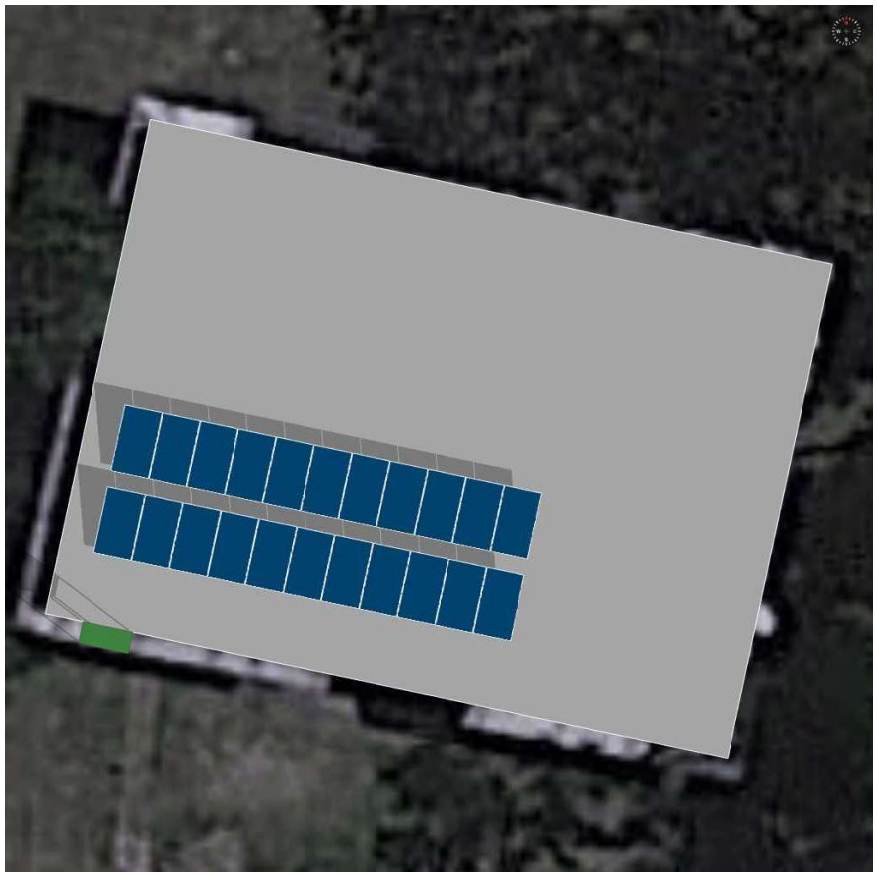
June 21 | 4:00:00 PM



nazario@ionleed.com
787-381-2448

Shading Analysis

December 21 | 9:00:00 AM



December 21 | 4:00:00 PM

Summary: Modules are shadow free for **99.45%** of solar time throughout the year.

nazario@ionleed.com
787-381-2448

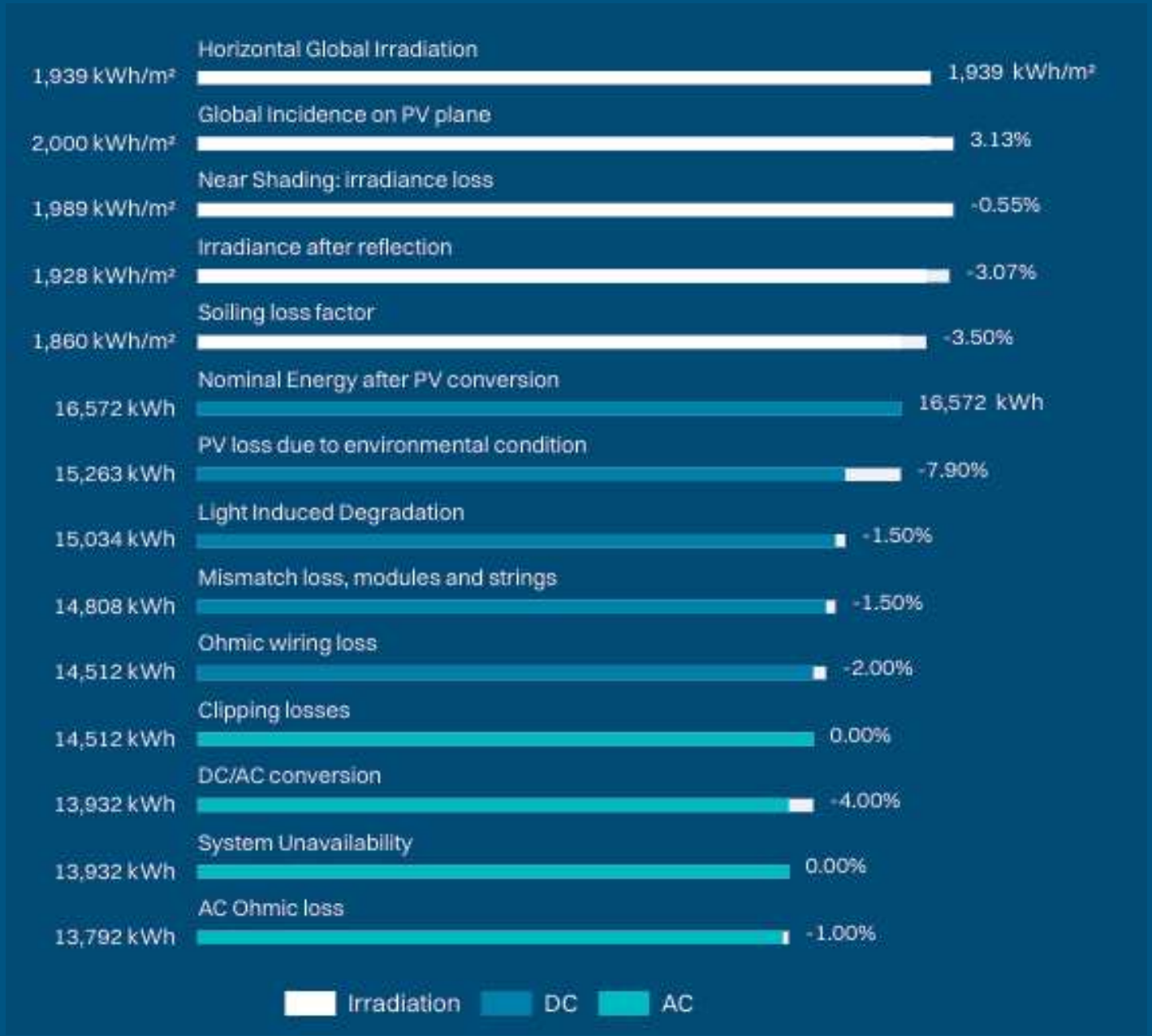
Irradiance Map

Solar Access

nazario@ionleed.com
787-381-2448

System Production Losses

Loss in generation predicted due to environmental and electrical factors



Environmental Impact

You are contributing to solve Earth's biggest problem - Climate Change.

CARBON DIOXIDE OFFSET	EQUIVALENT ACRES OF FOREST	COAL BURN AVOIDED
204.55	240.14	101.44
metric tons	acres/year	metric tons

Equivalent Number of Trees Planted

3,385.00 trees

Petrol Consumption Avoided

87,243.62 litres

Equivalent Kilometers Driven

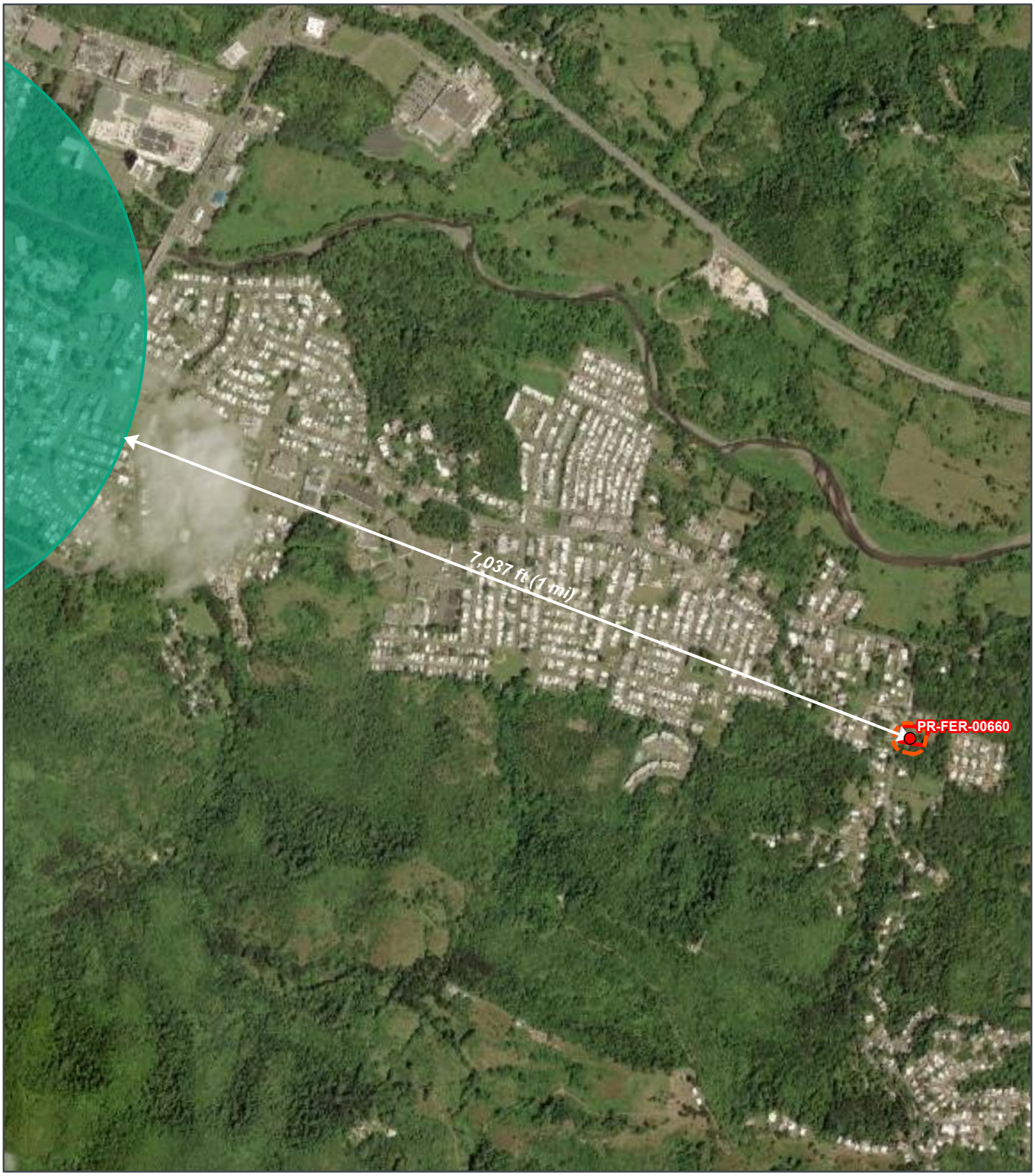
804,312.66 kms

nazario@ionleed.com
787-381-2448

Thank you

Ion Leed Solar Energy, LLC

nazario@ionleed.com
787-381-2448



FER PROGRAM

Figure B 7-1:
Critical Habitat Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site
- Site Parcel
- Buffer (100-ft)
- Critical Habitat - Final
- National Wildlife Refuges

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
18.071954, -67.015141

Data Source: https://services.arcgis.com/QVENGdaPbd4LUkLV/arcgis/rest/services/USFWS_Critical_Habitat/
Base Map: ESRI ArcGIS Online, accessed June 2025
Updated: 6/6/2025
Layout: Critical Habitat
Aprx: 78764_ferTier2Maps

N

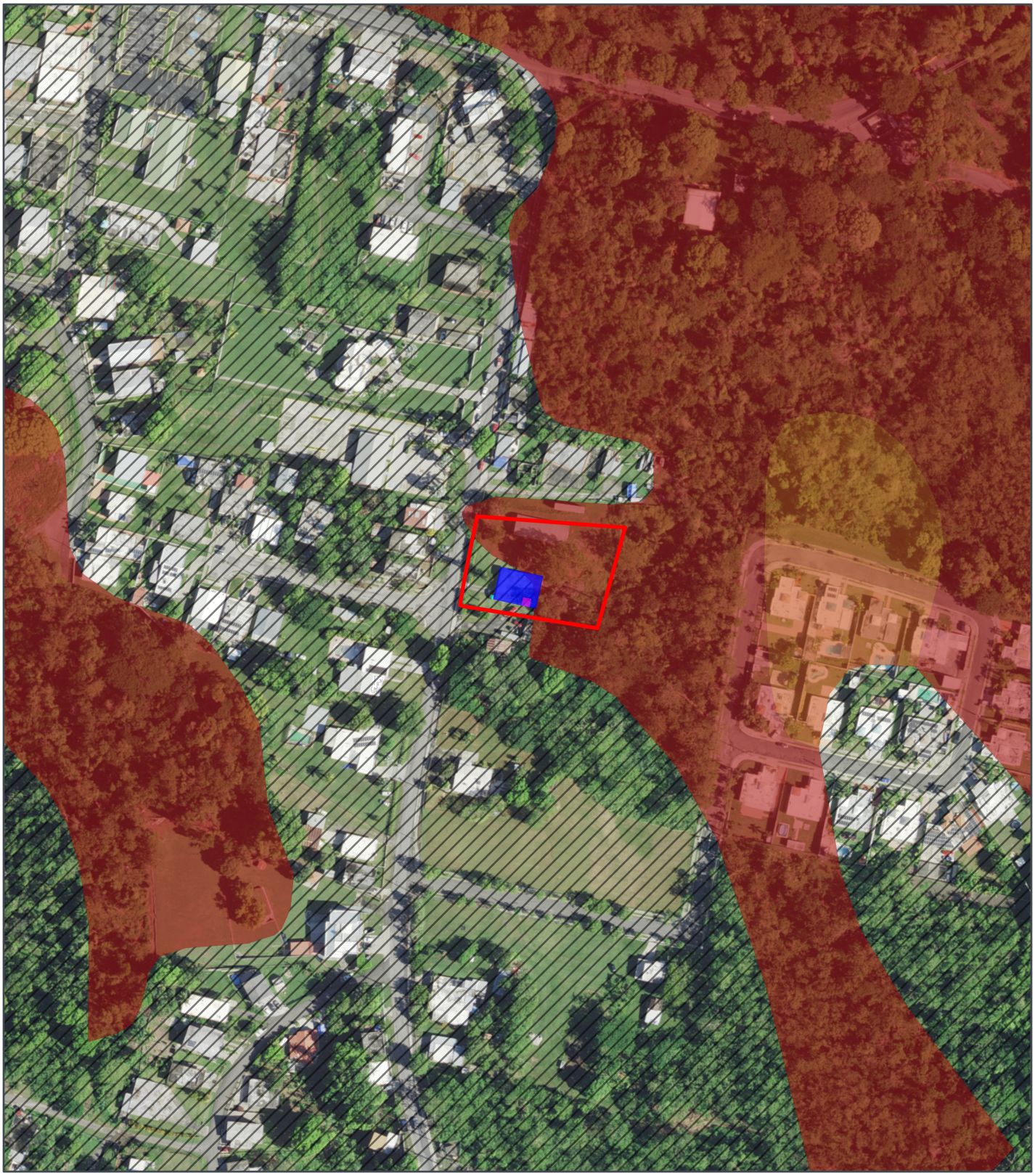
1:14,000

Puerto Rico

0 660 1,320 Feet

0 180 360 Meters

Attachment 8
Prime Farmland Map
and Soils Map



FER PROGRAM

Figure B 8-1: Prime Farmland Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Battery/Inverter (within existing structure)
- Wall mounted Electric Meter
- All areas are prime farmland
- Farmland of statewide importance
- Farmland of statewide importance, if irrigated
- Prime farmland if drained
- Prime farmland if irrigated
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Not prime farmland
- Not Public Information

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
18.071954, -67.015141

Data Source: https://websoilsurvey.nrcs.usda.gov/app/
Base Map: USA NAIP Imagery
Imagery Year: 2022
Updated: 6/6/2025
Layout: Prime Farmland
Aprx: 78764_ferTier2Maps

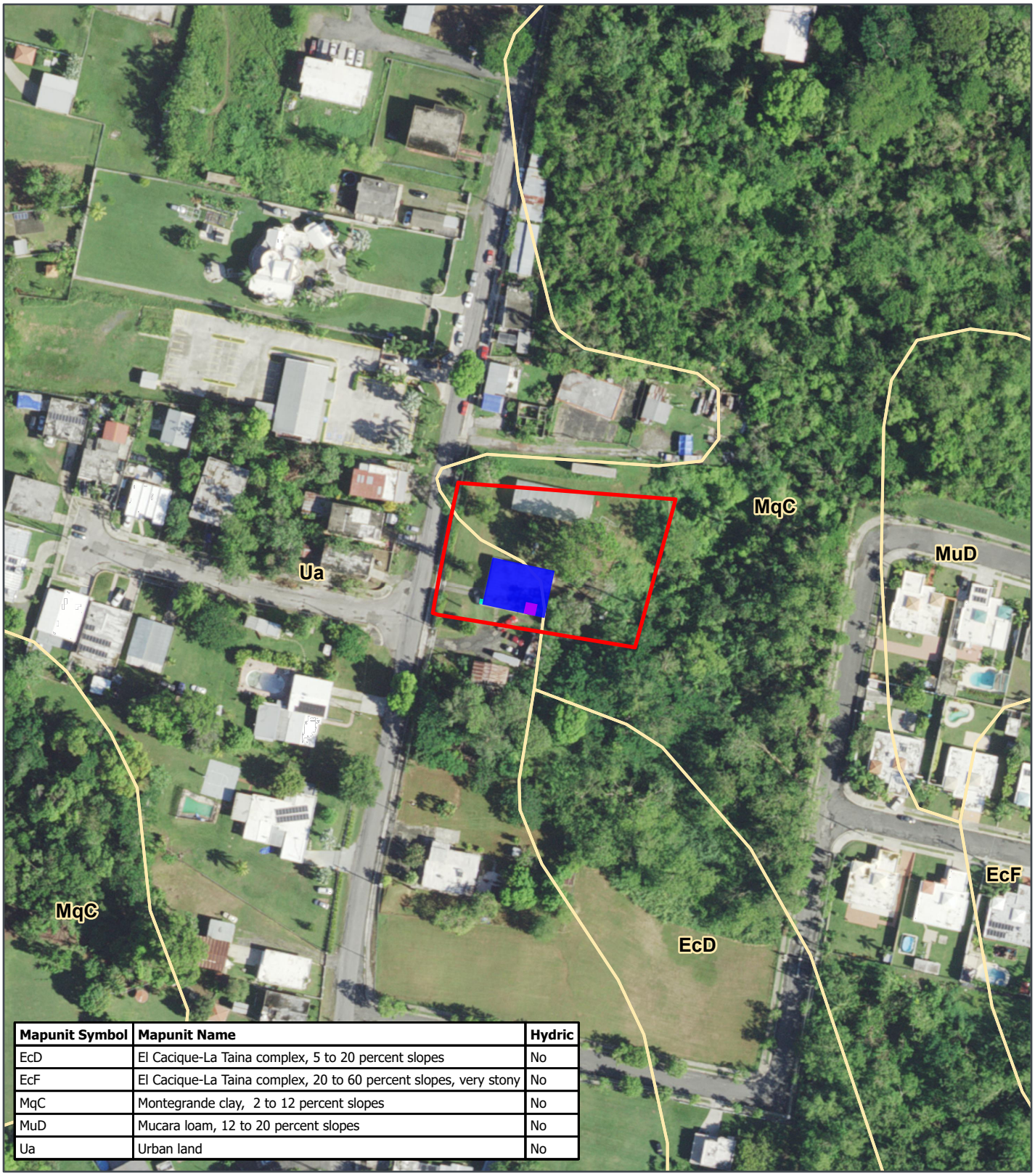
N

1:2,500

Puerto Rico

0 110 220 Feet

0 30 60 Meters



Mapunit Symbol	Mapunit Name	Hydric
EcD	El Cacique-La Taina complex, 5 to 20 percent slopes	No
EcF	El Cacique-La Taina complex, 20 to 60 percent slopes, very stony	No
MqC	Montegrande clay, 2 to 12 percent slopes	No
MuD	Mucara loam, 12 to 20 percent slopes	No
Ua	Urban land	No

FER PROGRAM

Figure B 8-2:USDA Soils Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Wall mounted Electric Meter
- Battery/Inverter (within existing structure)
- Soil Mapunit
- Hydric Soil

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000

Project Coordinates:
18.071954 -67.064771

Data Source: https://websoilsurvey.nrcs.usda.gov/app/
Base Map: USA NAIP Imagery
Imagery Year: 2022
Updated: 8/20/2025
Layout: Soils
Aprx: 78764_ferTier2Maps

N

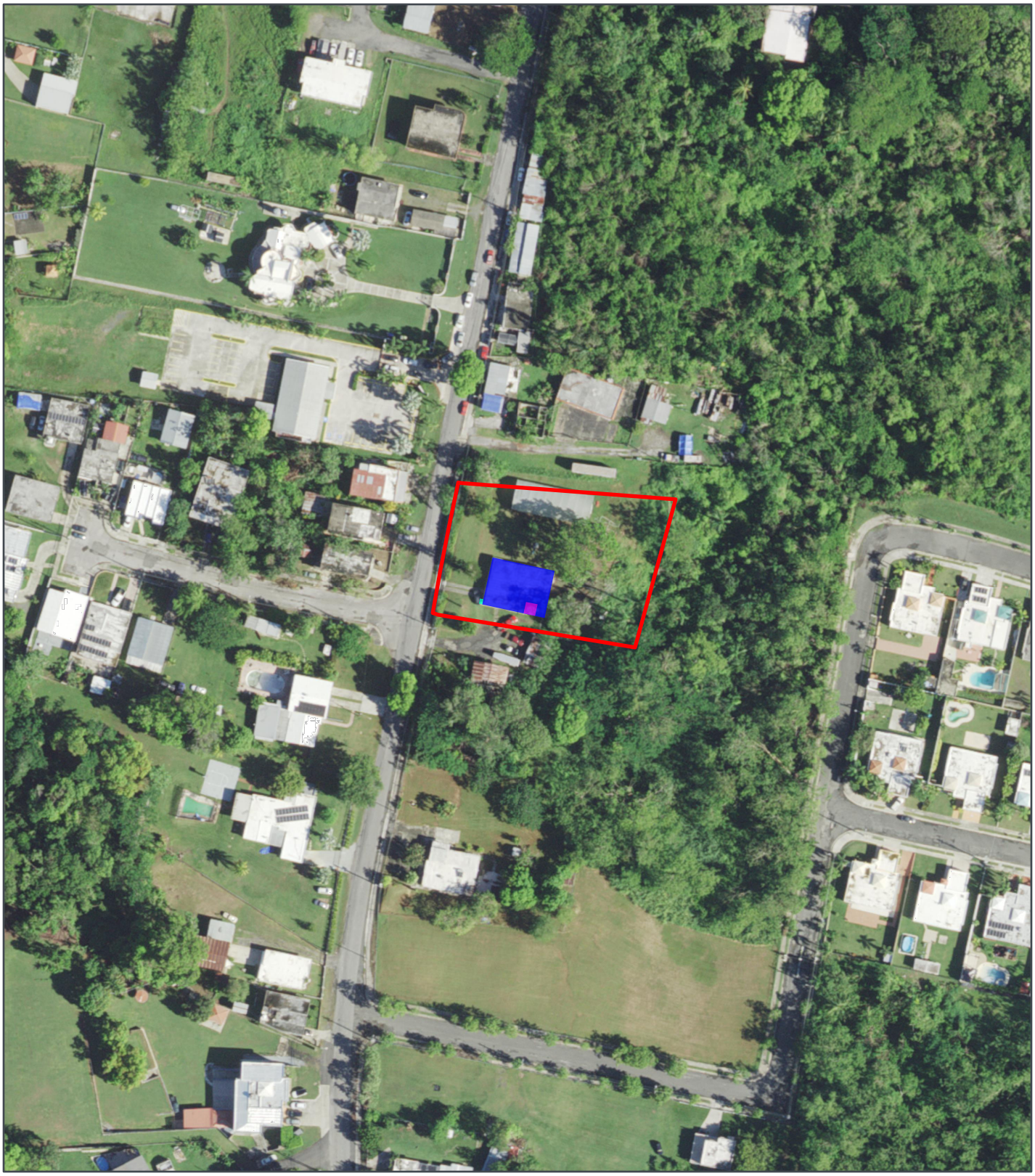
1:1,700

Puerto Rico

0 75 150 Feet

0 20 40 Meters

Attachment 9
Advisory Base Flood Elevation Map
and
Preliminary Floodplain Map



FER PROGRAM

Figure B 9-1: Advisory Base Flood Elevation For 100-Year Floodplain Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Battery/Inverter (within existing structure)
- Wall mounted Electric Meter
- Advisory Base Flood Elevation (ABFE)
- 0.2% Annual Chance Flood
- 1% Annual Chance Flood
- Zone/BFE Boundary
- Zone A
- Zone A-Floodway
- Zone AE
- Coastal A Zone
- Coastal A Zone and Floodway
- Zone AE-Floodway
- Zone AO
- Zone VE
- Zone X (500-year floodplain)

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683

Parcel ID: 334-068-354-01-000
Center of Map:
67.015153°W 18.071933°N

Data Source: https://gis.fema.gov/arcgis/rest/services/DR/PuertoRico_ABFE_1PCT/MapServer
Base Map: USA NAIP Imagery
Imagery Year: 2022
Updated: 6/25/2025
Layout: ABFE 1Pct
Aprx: 78764_ferTier2Maps

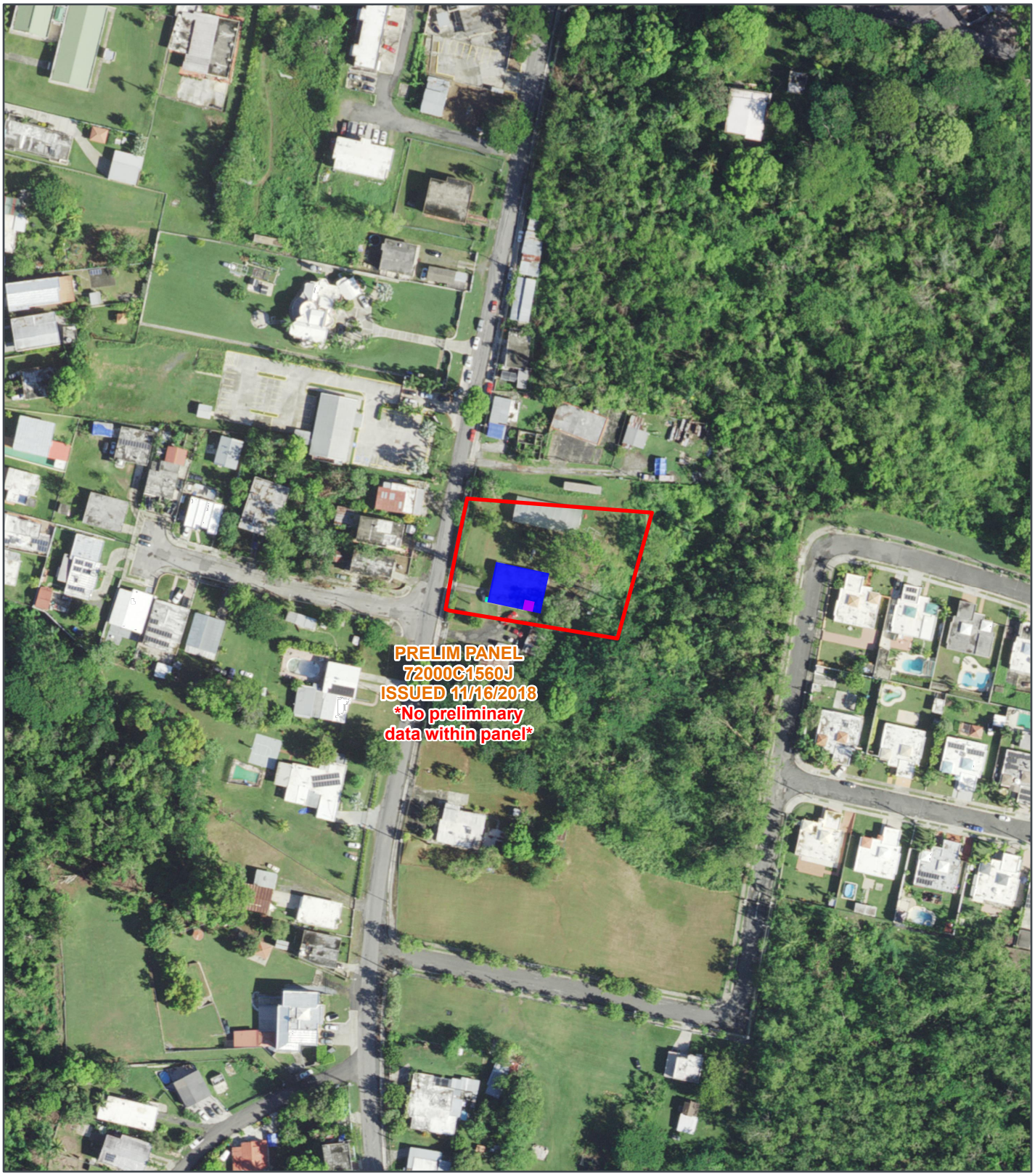
N

1:1,700

Puerto Rico

0 75 150 Feet

0 20 40 Meters



FER PROGRAM

Figure B 9-2: Preliminary Flood Insurance Rate Map (FIRM)

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Wall mounted Electric Meter
- Battery/Inverter (within existing structure)
- Preliminary Base Flood Elevations
- Preliminary FIRM Panel Index
- Zone A
- Zone AE
- Zone AH
- Zone AO
- Open Water
- Zone VE
- Zone X - Shaded (500-year floodplain)
- Floodway
- Zone X - Unshaded

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000

Project Coordinates:
18.071954 -67.064771

Data Source: https://hazards.fema.gov/gis/nfhl/rest/services/public/NFHL/MapServer
Base Map: USA NAIP Imagery
Imagery Year: 2022
Updated: 9/11/2025
Layout: Preliminary Floodplain
Aprx: 78764_ferTier2Maps

N

1:2,000

Puerto Rico

0 90 180 Feet

0 25 50 Meters

Attachment 10

SHPO Consultation
and
Previously Recorded
Cultural Resources Map

OFICINA ESTATAL DE
CONSERVACIÓN HISTÓRICA
GOBIERNO DE PUERTO RICO

Executive Director | Carlos A. Rubio Cancela | carubio@prshpo.pr.gov

August 27, 2025

Kristin Sanders
269 Avenida Ponce de León
San Juan, PR 00917

Referencia: SHPO-CF-07-30-25-04 - PRDOH_CDBG-MIT FER Program_Non-Historic Improvements_20250730_12 Cases_NHPA

Dear Ms. Sanders,

Our Office has received and reviewed the information submitted for the above referenced project in accordance with 54 USC 306108 (commonly known as Section 106 of the *National Historic Preservation Act, as amended)* and 36 CFR Part 800: *Protection of Historic Properties* from the Advisory Council on Historic Preservation.

Our records support your finding of **no historic properties affected** within the project's area of potential effects.

PR-FER-00070, Ciales

PR-FER-00370, Ciales

PR-FER-00415, Hatillo

PR-FER-00093, Isabela

PR-FER-00522, Las Marías

PR-FER-00728, Maricao

PR-FER-00178, Naguabo

PR-FER-00529, Naguabo

PR-FER-00187, Quebradillas

PR-FER-00660, San Germán

PR-FER-00059, San Sebastián

PR-FER-00160, Utuado

Please note that should the Agency discover other historic properties at any point during project implementation, you should notify the SHPO immediately. If you have any questions concerning our comments, do not hesitate to contact our Office.

Sincerely,

Carlos A. Rubio Cancela
State Historic Preservation Officer
CARC/GMO/MDC

July 30, 2025

Carlos A. Rubio Cancela
Director Ejecutivo
Oficina Estatal de Conservación Histórica
Cuartel de Ballajá (Tercer Piso)
San Juan, PR 00902-3935

PUERTO RICO DEPARTMENT OF HOUSING - CDBG-MIT AGRO-ENERGY STABILITY PROGRAM (FARM & ENERGY RESILIENCE PROGRAM [FER])

SECTION 106 NHPA EFFECT DETERMINATION SUBMITTAL – TWELVE (12) NON-HISTORIC CASES – *NO HISTORIC PROPERTIES AFFECTED*

Dear Architect Rubio Cancela,

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, HORNE is providing information for your review and requesting your concurrence regarding the above-referenced projects on behalf of the Puerto Rico Department of Housing (PRDOH) and the CDBG-MIT Agro-Energy Stability Program (Farm & Energy Resilience Program [FER]). On February 9, 2018, an allocation of Community Development Block Grant - Disaster Recovery (CDBG-DR) funds was approved by the United States Department of Housing and Urban Development (HUD) under the Federal Register Volume 83, No. 28, 83 FR 5844, to assist the Commonwealth of Puerto Rico in meeting unmet needs in the wake of Hurricanes Irma and Maria. On August 14, 2018, an additional $8.22 billion recovery allocation was allocated to Puerto Rico under the Federal Register Volume 83, No. 157, 83 FR 40314. With these funding allocations, the Puerto Rico Department of Housing (Housing) aims to lead a comprehensive and transparent recovery for the benefit of Puerto Rico residents.

The purpose of the FER is to benefit Puerto Rican communities enhancing agro-industrial capacity and infrastructure to support more resilient operations. By implementing renewable energy solutions for agribusinesses and farmers, the Program will bolster their ability to withstand energy instability and challenges that may arise in the aftermath of disaster events. Investing in renewable energy development will ensure a steady and reliable energy supply capable of sustaining businesses and upholding supply chains vital to the food and agriculture industry sector, included in the Food, Water, and Shelter Lifeline identified in the CDBG-MIT Action Plan. Eligible renewable Projects for the Program include Photovoltaic Systems (**PVS**) and Battery Storage Systems (**BSS**), which can be either new

installations or expansions of existing systems tailored to meet eligible agribusinesses and farmers' current electricity demands.

On behalf of PRDOH, we are submitting the following twelve (12) cases for Section 106 consultation as it cannot be cleared with Programmatic Agreement allowances. These cases consist of the installation of PV systems with battery backup systems. The prepared excel file presents all information for these properties for your review including the FER Case ID, locational data, photographs, a link to the google map, key dates and supporting imagery, and the PRDOH Eligibility and Effect Determinations. For cases requiring ground disturbance additional maps indicating the parcel location on aerial imagery base, parcel location on topographic map base, and area of potential effect on aerial imagery base are included as separate attachments.

Municipality	Case ID	Street Address
Ciales	PR-FER-00070	Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo
Ciales	PR-FER-00370	Carr 615 KM 7.2 Interior Bo Poza
Hatillo	PR-FER-00415	Carr 130 km 1.4 Bo. Pueblo
Isabela	PR-FER-00093	Carr 475 Km. 2.0 Bo Arenales
Las Marías	PR-FER-00522	BO BUENA VISTA CARR 370 KM 2.5 L
Maricao	PR-FER-00728	Carr 105 Km 42.2 Indiera Baja
Naguabo	PR-FER-00178	CARR 31 KM 13.1 BO PENA POBRE
Naguabo	PR-FER-00529	Bo. Río, Sector Brazo Seco, Carr. 927 Km 9.2
Quebradillas	PR-FER-00187	Bo San Antonio Carr. 483 km 1.2 INT Calle Cordero Gonzalez
San Germán	PR-FER-00660	Carr 118 km 4.8 Bo Retiro La Tea
San Sebastián	PR-FER-00059	Carr. 424 Km 2.0 Sector Marco Antonio Bo. Guacio
Utuado	PR-FER-00160	Road 621 km 1 Caguana

The properties are not individually eligible, listed in the National Register of Historic Places (NRHP) or located within or adjacent to an eligible or listed Historic District. A recommendation of "No Historic Properties Affected", pursuant to 36 CFR 800.4(d)(1), has been made for these proposed projects.

We look forward to your review and concurrence. Please contact me with any questions or concerns by email at kristin.sanders@horne.com or phone at 225-276-2109.

Kindest regards,

Kristin P. Sanders

Kristin P. Sanders
Historic Preservation Manager

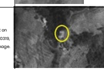
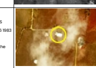
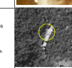
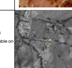
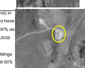
Enclosures

PUERTO RICO DEPARTMENT OF HOUSING - CDBG-MIT AGRO-ENERGY STABILITY PROGRAM (FARM & ENERGY RESILIENCE PROGRAM [FER])

Improvements to Non-Historic Properties when there is No Proposed Ground Disturbance in the Scope of Work: Activities Limited to the Rooftop Installation of Photovoltaic System with Battery Back Up and/or Water Storage Systems

Properties 45 Years or Greater, Not Individually Eligible or Listed in the NRHP and Not Adjacent to Nor Located Within an Eligible or Listed NRHP Historic District Where There is No Proposed Ground Disturbance in the Scope of Work

SUBMISSION DATE:07/29/2025 - 18 Cases

PROPERTY INFORMATION													UNDERTAKING DETAILS					NATIONAL REGISTER ELIGIBILITY		DETERMINATION OF EFFECT			
CASE ID	STREET ADDRESS	MUNICPALITY	PARCEL ID	LATITUDE	LONGITUDE	ACREAGE	ESTIMATED FUNDING	PHOTO (Current Aerial imagery and up to 3 photos: front, right, left)	LINK TO GOOGLE MAP	KEY DATES VERIFIED BY GOOGLE EARTH PRO, AERIAL PHOTO AND USGS MAPS			PROPOSED EQUIPMENT	ELECTRICAL LINES	BATTERY INSTALLATION	INVERTER INSTALLATION	ELECTRICAL METERS	PRDOH ELIGIBILITY DETERMINATION	SHPO CONCURRENCE (SHPO USE ONLY)	PRDOH EFFECT DETERMINATION	SHPO CONCURRENCE (SHPO USE ONLY)	PRDOH COMMENTS	SHPO COMMENTS
PR-FER-00070	Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo	Ciales	108-000-003-12-001	18.360863	-66.465247	1.04	$81,475.00		https://maps.app.goo.gl/WirJxMcXeyR2CXBV8	ca. 1975	Building present on 1977 ARH770100090625 imagery, (earliest available).		Photovoltaic System Only	New above-ground	Ground-mounted (on existing foundation)	Wall-mounted	New wall-mounted	Ineligible	Select Eligibilty	No Historic Properties Affected	Select Effect	Prepared by: Tyra Brunz, SOI Historian and approved by Elizabeth Atkins, M.A. on 7/23/2025.	
PR-FER-00370	Carr 615 KM 7.2 Interior Bo Poza	Ciales	165-000-008-26-000	18.279856	-66.470895	5.31	$211,080.00		https://maps.app.goo.gl/dFTLPcPXvXkarT5x6	ca. 1975	Project building present on 1977 USGS ARH770100060319, the earliest available image.		Photovoltaic System Only	Existing will be utilized	Wall-mounted	Wall-mounted	Existing will be utilized	Ineligible	Select Eligibilty	No Historic Properties Affected	Select Effect	Prepared by: Robin Smith, SOI Historian and approved by Elizabeth Atkins, M.A. on 7/25/2025.	
PR-FER-00415	Carr 130 km 1.4 Bo. Pueblo	Hatillo	010-079-103-14-005	18.475214	-66.819396	10.14	$197,555.00		https://maps.app.goo.gl/RaXSrSg4xCYrudG19	Earliest building ca. 1975; All other project buildings ca. 1998	The building that will house the batteries is present on USGS 1977 image ARH770100050270. The remainder of the complex is present on 2004 google earth pro imagery but not on 1993 imagery.		Photovoltaic System Only	Existing will be utilized	Wall-mounted	Wall-mounted	Existing will be utilized	Ineligible	Select Eligibilty	No Historic Properties Affected	Select Effect	Prepared by: Robin Smith, SOI Historian and approved by Elizabeth Atkins, M.A. on 7/18/2025.	
PR-FER-00093	Carr 475 Km. 2.0 Bo Arenales	Isabela	025-000-010-05-901	18.45064	-67.00704	198.29	$250,000.00		https://maps.app.goo.gl/JbjD1MwGLmhJuqnX9	ca. 1980	Building present on USGS image ARL820580040616 1983 but not on USGS image ARH770100050266 1977, the latest available image.		Photovoltaic System Only	New above-ground	Wall-mounted	Connected directly to PV System	Existing will be utilized	Ineligible	Select Eligibilty	No Historic Properties Affected	Select Effect	Prepared by: Robin Smith, SOI Historian and approved by Elizabeth Atkins, M.A. on 7/23/2025.	
PR-FER-00522	BO BUENA VISTA CARR 370 KM 2.5 L	Las Marías	184-000-009-62-000	18.249395	-66.953109	76.36	$127,394.50		https://maps.app.goo.gl/9faL3NgbhEL64zcM8	ca. 1955	Building appears on 1959 USGS EE image AR1VVO0004B0182, the earliest available image.		Photovoltaic System Only	New above-ground	Ground-mounted (on existing foundation)	Connected directly to PV System	Existing will be utilized	Ineligible	Select Eligibilty	No Historic Properties Affected	Select Effect	Prepared by: Saneea Sakhyani, SOI Historian and approved by Elizabeth Atkins, M.A. on 7/18/2025.	
PR-FER-00728	Carr 105 Km 42.2 Indiera Baja	Maricao	263-000-009-31-901	18.15863	-66.8966	3.81	$52,060.00		https://maps.app.goo.gl/drJGo1XmcsHTsnx78	ca. 1970	Building present on 1975 USGS image AR1VDNG00080011 but not present on 1959 USGS image AR1VVO0002B0114, the latest available imagery		Photovoltaic System Only	New above-ground	Ground-mounted (on existing foundation)	Ground-mounted	Existing will be utilized	Ineligible	Select Eligibilty	No Historic Properties Affected	Select Effect	Prepared by: Robin Smith, SOI Historian and approved by Elizabeth Atkins, M.A. on 7/25/2025.	
PR-FER-00178	CARR 31 KM 13.1 BO PENA POBRE	Naguabo	255-011-103-22-000	18.208604	-65.804906	116.17	$249,887.00		https://maps.app.goo.gl/nwvqzmJbaZCDtwH88	ca. 1975	Building present on USGS ARH770100060352 1977; earliest imagery from 1973 has cloud cover.		Photovoltaic System Only	Existing will be utilized	Wall-mounted	Wall-mounted	Existing will be utilized	Ineligible	Select Eligibilty	No Historic Properties Affected	Select Effect	Prepared by: Robin Smith, SOI Historian and approved by Elizabeth Atkins, M.A. on 7/25/2025.	
PR-FER-00529	Bo. Río, Sector Brazo Seco, Carr. 927 Km 9.2	Naguabo	255-000-010-09-998	18.195575	-65.752803	56.66	$123,471.00		https://maps.app.goo.gl/NKTYaZSL72e1jhba6	ca. 1980	Building present on 1983 USGS image ARL820580040808 but not on 1977 USGS image ARH770100060352.		Photovoltaic System Only	Existing will be utilized	Wall-mounted	Connected directly to PV System	Existing will be utilized	Ineligible	Select Eligibilty	No Historic Properties Affected	Select Effect	Prepared by: Robin Smith, SOI Historian and approved by Elizabeth Atkins, M.A. on 7/18/2025.	
PR-FER-00187	Bo San Antonio Carr. 483 km 1.2 INT Calle Cordero Gonzalez	Quebradillas	027-075-491-27-000	18.442885	-66.909656	4.52	$108,000.00		https://maps.app.goo.gl/bzuuXdkhhNt9zeZy7	ca. 1980	Building present on 1983 USGS image ARL820580040623 but not USGS image ARH770100050294 1977.		Photovoltaic System Only	Existing will be utilized	Wall-mounted	Wall-mounted	Existing will be utilized	Ineligible	Select Eligibilty	No Historic Properties Affected	Select Effect	Prepared by: Robin Smith, SOI Historian and approved by Elizabeth Atkins, M.A. on 7/23/2025.	
PR-FER-00660	Carr 118 km 4.8 Bo Retiro La Tea	San Germán	334-068-354-01-000	18.071954	-67.015141	0.72	$50,286.00		https://maps.app.goo.gl/m8yqcZLkvpcxqtwY9	ca. 1970	Building present on 1975 imagery (earliest available on USGS and NETR).		Photovoltaic System Only	New above-ground	Wall-mounted	Wall-mounted	Existing will be utilized	Ineligible	Select Eligibilty	No Historic Properties Affected	Select Effect	Prepared by: Tyra Brunz, SOI Historian and approved by Elizabeth Atkins, M.A. on 7/18/2025.	
PR-FER-00059	Carr. 424 Km 2.0 Sector Marco Antonio Bo. Guacio	San Sebastián	156-000-009-16-901	18.282023	-67.01208	120.73	$239,490.00		https://maps.app.goo.gl/RrMs1OeWNYetkbnF6	ca. 1975 for first building and ca. 2010 for current complex	The first building (central) in the complex appears to have been constructed ca. 1975, as it appears on the 1977 USGS EE aerial image, H770100040235. No buildings were on the earlier NETR 1975 or 1958 aerial images.		Photovoltaic System Only	Existing will be utilized	Ground-mounted (on existing foundation)	Ground-mounted	Existing will be utilized	Ineligible	Select Eligibilty	No Historic Properties Affected	Select Effect	Prepared by: Saneea Sakhyani, SOI Historian and approved by Elizabeth Atkins, M.A. on 7/25/2025.	
PR-FER-00160	Road 621 km 1 Caguana	Utuado	160-000-010-16-000	18.2898	-66.746349	277.75	$179,980.00		https://maps.app.goo.gl/mP1xrfd6E5Dpe8b3A	ca. 1975	Building present on 1977 USGS image ARH770100060326, but not present on NETR 1972.		Photovoltaic System Only	New above-ground	Wall-mounted	Wall-mounted	Existing will be utilized	Ineligible	Select Eligibilty	No Historic Properties Affected	Select Effect	Prepared by: Robin Smith, SOI Historian and approved by Elizabeth Atkins, M.A. on 7/25/2025.	

DEPARTMENT OF
HOUSING
GOVERNMENT OF PUERTO RICO

March 24, 2025

Samir El Hage Arocho
General Partner, HORNE LLP
269 Juan Ponce de León Ave.
Hato Rey, Puerto Rico 00917-00918

Via email: samir.elhage@horne.com

RE: Authorization for Grant Management (GM) to Conduct the Required Environmental Consultations with Federal and Local Agencies on PRDOH's Behalf

Dear Mr. El Hage,

Provisions at 24 C.F.R. Part 58 establish the environmental review procedures for entities assuming the U.S. Department of Housing and Urban Development (**HUD**) environmental responsibilities under the National Environmental Policy Act (**NEPA**) and other applicable laws. The Puerto Rico Department of Housing (**PRDOH**), as the designated CDBG-DR/MIT grantee, has assumed HUD's environmental responsibilities under NEPA and related laws (**Responsible Entity**) by directly implementing multiple CDBG-DR/MIT projects.

One of the Responsible Entity's many responsibilities under 24 C.F.R. Part 58 is consulting with State, Federal, and non-federal entities in preparing an Environmental Review Record (**ERR**). Regarding a Responsible Entity's interactions with State, Federal, and non-Federal entities, 24 C.F.R. § 58.14 states that:

> *A responsible entity shall consult with appropriate environmental agencies, State, Federal and non-Federal entities and the public in the preparation of an EIS, EA or other environmental reviews undertaken under the related laws and authorities cited in § 58.5 and § 58.6. […].*

In conducting its role as a Responsible Entity that directly undertakes a project, as per 24 C.F.R. § 58.4(b)(1), PRDOH *"must assume the environmental review responsibilities for the State's activities* ***and those of any non-governmental entity that may participate in the project****."* Accordingly, a Responsible Entity may delegate certain tasks in the preparation of ERRs but retains full legal responsibility for compliance with environmental requirements.

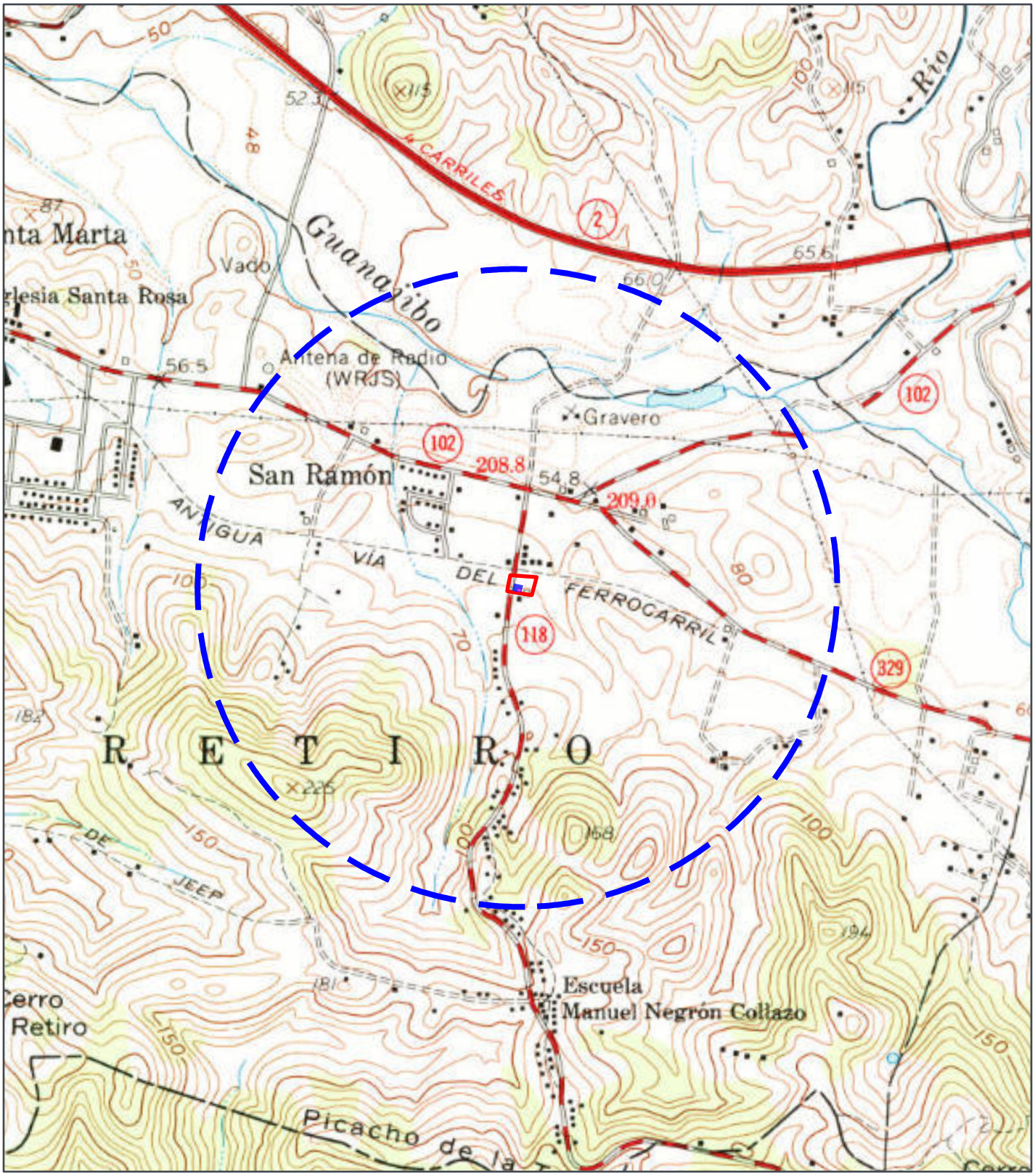
To effectively manage available environmental resources and expedite the preparation of ERRs, PRDOH—as Responsible Entity—wishes to delegate the task of consulting with State, Federal, and non-Federal entities contained in 24 C.F.R. § 58.14. Therefore, PRDOH hereby authorizes Alberto Mercado Vargas, GM Environmental SME, or his authorized representative) to conduct on its behalf the environmental consultations with Federal and local agencies required to prepare ERRs for the implementation of CDBG-DR and CDBG-MIT projects, while still maintaining the ultimate and full legal responsibility for compliance with environmental requirements. This authorization extends to both early and formal consultations before Federal agencies such as the U.S. Fish and Wildlife Service (**USFWS**) and the State Historic Preservation Office (**SHPO**), among others required for compliance with applicable laws and regulations as established in 24 C.F.R. § 58.14 and § 58.5. GM should include and copy the PRDOH Environmental Division in all communications with Federal and local agencies for these purposes.

PRDOH appreciates GM's commitment to Puerto Rico's recovery and is confident in its ability to execute this task effectively. Please feel free to contact me with any questions.

Sincerely,

Ciary Pérez Peña
Secretary
Puerto Rico Department of Housing

Cc. Alberto Mercado Vargas
GM Environmental SME
alberto.mercadovargas@horne.com



FER PROGRAM

Figure B 10-1: Previously Recorded Cultural Resources Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Battery/Inverter (within existing structure)
- Wall mounted Electric Meter
- Buffer (0.5-mile)
- Archaeological Site
- Historical Place
- Historic Area Point
- JP Historical Sites
- National Register of Historic Places
- National Historic Landmark
- National Register of Historic Places
- Historic Community
- Historic District
- Arroyo Historic Zone
- Caguas Historic Zone
- Coamo Historic Zone
- Guayama Historic Zone
- Manati Historic Zone
- Miramar Historic Zone
- Ponce Historic Zone
- San German Historic Zone
- San Juan Historic Zone
- Vega Baja Historic Zone
- Traditional Urban Centers

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
18.071954 -67.064771

Data Source: State Historic Preservation Office and Puerto Rico Institute of Culture
Base Map: ESRI ArcGIS Online, accessed June 2025
Updated: 6/6/2025
Layout: Cultural Resources Aprx: 78764_ferTier2Maps

N

1:14,000

Puerto Rico

0 660 1,320 Feet

0 180 360 Meters

Attachment 11
Sole Source Aquifer Map

FER PROGRAM

Figure 11-1: Sole Source Aquifers Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

Site

Sole Source Aquifers

***There are no Sole Source Aquifers in Puerto Rico.**

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
18.071954 -67.064771

Data Source: https://services.arcgis.com/cJ9YHowT8TU7DUyn/arcgis/rest/services/SoleSourceAquifers/FeatureServer
Base Map: ESRI ArcGIS Online, accessed June 2025
Updated: 6/6/2025
Layout: Sole Source Aquifers
Aprx: 78764_ferTier2Maps

N

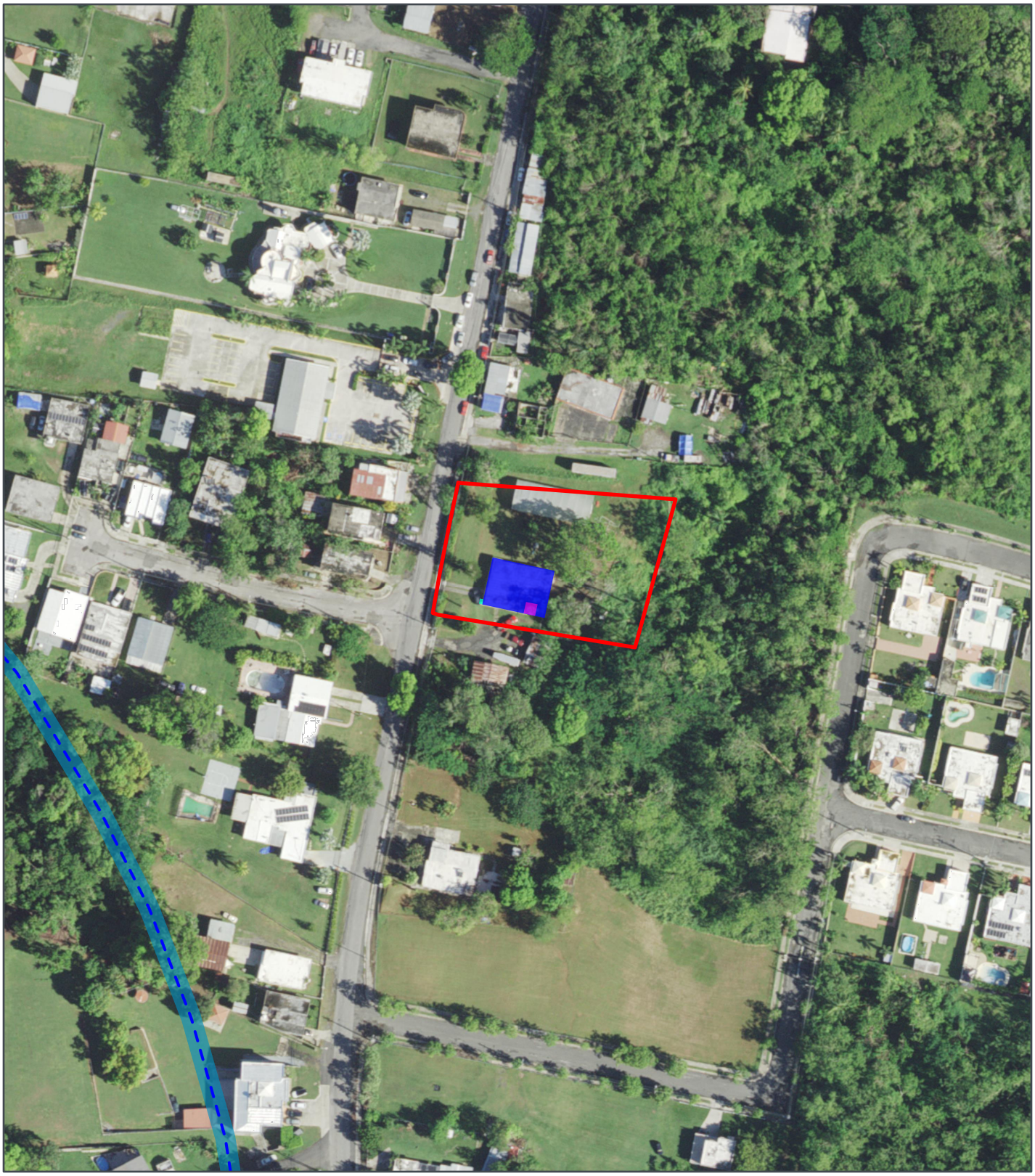
1:12,000,000

Puerto Rico

0 564,050 1,128,100 Feet

0 160,200 320,400 Meters

Attachment 12 Wetlands Visual Assessment Form and Wetlands Protection Map



FER PROGRAM

Figure B 12-1: Wetlands Protection Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Battery/Inverter (within existing structure)
- Wall mounted Electric Meter
- NHD Stream
- NHD Waterbody
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
18.071954 -67.064771

Data Source: https://apps.nationalmap.gov/downloader/#/ https://www.fws.gov/program/national-wetlands-inventory/data-download
Base Map: USA NAIP Imagery
Imagery Year: 2022
Updated: 6/6/2025
Layout: Wetlands Protection

N

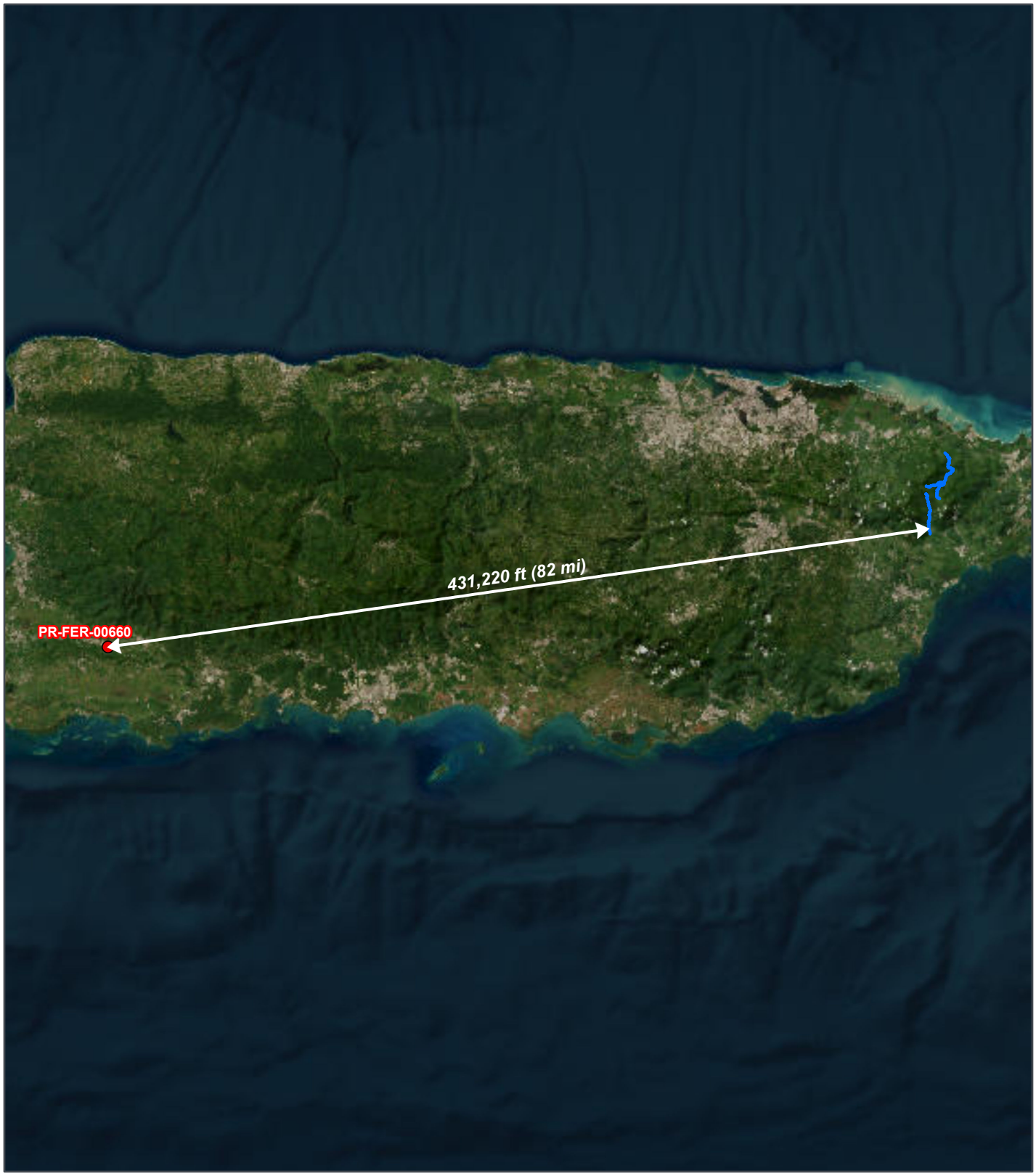
1:1,700

Puerto Rico

0 75 150 Feet

0 20 40 Meters

Attachment 13
Wild and Scenic Rivers Map



FER PROGRAM

Figure B 13-1: National Wild and Scenic River Map

Applicant ID: PR-FER-00660

SWCA ENVIRONMENTAL CONSULTANTS

Site

National Wild and Scenic River

Carr 118 km 4.8 Bo Retiro La Tea
San Germán, PR 00683
Parcel ID: 334-068-354-01-000
18.071954 -67.064771

Data Source: https://apps.fs.usda.gov/arcx/rest/services/EDW/EDW_WildScenicRiverSegments_01/mapserver

Base Map: ESRI ArcGIS Online, accessed June 2025
Updated: 6/6/2025

N

1:870,000

Puerto Rico

0 40,000 80,000 Feet

0 10,000 20,000 Meters

Appendix C
Environmental Site Inspection Report

ENVIRONMENTAL FIELD ASSESSMENT FORM

SWCA ENVIRONMENTAL CONSULTANTS

Applicant Name: Leonardo Estrada Ferrer	Program ID: PR-FER-00660
Building Coordinates: 18.071954, -67.015141	Parcel ID: 334-068-354-01-000
Street Address: Carr 118 km 4.8 Bo Retiro La Tea	Municipio: San Germán
Zip Code: 00683	

Inspector Name: Eileen Ortiz	Inspection Date: 05/09/2025

***Please take a center point of the panel, battery, inverter, and electrical panel location and add all data to Shapefile.**

Building Information

Location Verified By:	Parcel	Comment:
Building correct on GIS?	Yes	Comment:
Bldg type (if applicable):	Single Family	Comment: It is a house, but the type of project is a plant nursery. Refer to photo log pictures #01, #03, and #05.
Bldg foundation:	Slab	Comment:
# of Stories:	1	Comment:
Detached garage / carport present?	No	Comment: The open parking area is located on the right side of the property. Refer to photo log picture #14.
Other residences present on parcel?	No	Comment:
Was property accessible by vehicle?	Yes	Comment:
Access issues?	No	Comment:

General Conditions

If there are going to be electric lines installed, will be located above or below ground?	N/A	Comment: The applicant does not know if new electric lines will be installed.

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If installing a new electric meter, will it be ground mounted or wall mounted?	N/A	Comment: It is unknown if there will be a new meter, but there is an existing meter that could be used. Refer to photo log picture #11.
Will the batteries be ground mounted or wall mounted?	Wall Mounted	Comment: Refer to photo log picture #13.
Is there evidence of disaster damage?	No	Comment:
Is a septic system present? If Yes report apparent condition.	Yes	Comment: The septic system is located at the back of the property in good condition. Refer to photo log picture #12.
Are water wells present?	No	Comment:
Are creeks or ponds present?	No	Comment:

Parcel Conditions

Note – for Any Yes answers specify type, contents and location

Are commercial or industrial hazardous facilities at parcel or within visual sight?	No	Comment:
Are there signs of underground storage tanks?	Yes	Comment: The septic system is located at the back of the property. Refer to photo log picture #12.
Are above-ground tanks >10 gallons present? If Yes, also state condition.	Yes	Comment: There are three connected water tanks: one 1,000-gallon located at the back of the plant nursery, 800-gallon and 200-gallon located at the back of the parcel. Refer to photo log pictures #08 and #09.
Are 55-gallon drums present? If Yes, also state condition.	No	Comment:
Are abandoned vehicles or electrical equipment present?	No	Comment:
Is other potential environmentally hazardous debris on the parcel?	No	Comment:
Is there non-environmentally hazardous debris on the parcel?	Yes	Comment: The site contains debris related to farming operations, such as irrigation parts, fencing wire, and old equipment. Refer to photo log pictures #06, #07 and #08.

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Are any leaks, soil stains, or stressed vegetation present associated with any of the above or separately?	No	Comment:
Are there any pungent, foul or noxious odors?	No	Comment:
Are there any potentially hazardous trees that could fall?	No	Comment:
Are any bird nests visible?	No	Comment:
Are there any animal burrows visible?	No	Comment:
Are any potential wetlands on-site or visible on adjacent parcel?	No	Comment: According to the National Wetlands Inventory (NWI) there are wetlands approximately 460 feet from the project footprint, but there will be no impact on the wetlands. Refer to photo log picture #15.

Building Environmental Conditions

Does the building appear safe to enter?	Yes	Comment:
Is peeling or flaking paint visible on the exterior?	Yes	Comment: There is peeling paint on the wall at the back of the parcel. Refer to photo log picture #08.
Are any potential asbestos-containing materials visible on the building exterior?	No	Comment:
Is any mold visible on the outside of the building?	Yes	Comment: There is mold on top of the septic system and the roof eaves. Refer to photo log pictures #03 and #12.
Is there a smell of mold?	No	Comment:

Additional Needs Analysis

Based on the above findings, does additional information need to be obtained from the applicant to determine whether an environmental hazard is present?	No	Comment:

☒ I verify that I have physically visited this property and that the findings outlined above are accurate.

Eileen Ortiz

Inspector Signature
Eileen Ortiz
May 09, 2025

SWCA ENVIRONMENTAL CONSULTANTS

Following pages are used for:
Location Map with parcel boundaries and building point (Aerial base with streets labelled)
Photos taken during inspection, with Date / Type / Direction associated with the photo

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 01	**Date:** May 09, 2025
Photo Direction: Southeast	
Description: This picture overviews the front of the property.	

Photo #: 02	**Date:** May 09, 2025
Photo Direction: East	
Description: This picture overviews the front of the property from a right angle and the area on the roof where the solar panels will be installed.	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 03	**Date:** May 09, 2025
Photo Direction: South	
Description: This picture overviews the front of the property from a left angle.	

Photo #: 04	**Date:** May 09, 2025
Photo Direction: Southeast	
Description: This picture overviews the left side of the property.	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 05	**Date:** May 09, 2025
Photo Direction: East	
Description: This picture overviews the plant nursery located on the left side of the property.	

Photo #: 06	**Date:** May 09, 2025
Photo Direction: North	
Description: This picture overviews the left side of the plant nursery and a pool.	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 07	**Date:** May 09, 2025
Photo Direction: Southwest	
Description: This picture overviews the chicken cage located on the left side of the property.	

Photo #: 08	**Date:** May 09, 2025
Photo Direction: Northwest	
Description: This picture overviews one connected 400-gallon water tank (left) and one connected 200-gallon water tank (right), both located at the back of the property.	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 09	**Date:** May 09, 2025
Photo Direction: South	
Description: This picture overviews one connected 1,000-gallon water tank located at the back of the plant nursery.	

Photo #: 10	**Date:** May 09, 2025
Photo Direction: South	
Description: This picture overviews the electric cables located at the entrance of the property	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 11	**Date:** May 09, 2025
Photo Direction: North	
Description: This picture overviews the wall mounted meter located on the right side of the property.	

Photo #: 12	**Date:** May 09, 2025
Photo Direction: Southeast	
Description: This picture overviews the septic system located at the back of the property.	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 13	**Date:** May 09, 2025
Photo Direction: Northwest	
Description: This picture overviews the room where the batteries will be installed.	

Photo #: 14	**Date:** May 09, 2025
Photo Direction: South	
Description: This picture overviews the right side of the property from a left angle and the open parking area.	

Project #: PR-FER-00660	Photographer: Eileen Ortiz
Location Address: Carr 118 km 4.8 Bo Retiro La Tea, San German, PR 00683	Coordinates: 18.071954, -67.015141

Photo #: 15	**Date:** May 09, 2025
Photo Direction: Northeast	
Description: This picture provides an overview of the wetland area, which, according to the National Wetlands Inventory (NWI), is located approximately 460 feet from the project footprint, but there will be no impact on the wetlands.	

Appendix D

Quote

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

PROGRAMA CDBG-MIT

Programa de Resiliencia Agrícola y Energética

COTIZACION DEL SISTEMA DEL PROYECTO

EMPRESA DE INSTALACION DE ENERGIA RENOVABLE

Nombre de la Empresa:	**Nombre del Representante:**
Ion Leed, LLC.	Elvin Camacho Gonzalez

INFORMACION DEL SOLICITANTE

Nombre del Solicitante:	**Nombre del Negocio:**
Leonardo Estrada Ferrer	Leonardo Estrada Ferrer

Dirección de la propiedad:	**Municipio:**	**Código postal:**
CAR 118 K4 H7 BO RETIRO TEA SAN GERMAN PR 00683		

Coordenadas de la propiedad (proporcione hasta seis decimales)

Latitud 18.071954 **Longitud** -67.015141

CONSUMO ENERGETICO DE LA PROPIEDAD

Consumo energético anual (basado en el consumo de los últimos 12 meses, según lo reflejado en la factura del servicio eléctrico o en la información proporcionada en el estudio de carga computado en kWh diarios).

11800 kWh

Capacidades del sistema existente (si aplica):

Capacidad del sistema fotovoltaico		**Capacidad de almacenamiento de batería**	
N/A	kW	N/A	kWh

PROPUESTA DEL SISTEMA

Tipo de Sistema	**Costo Total**
Sistema fotovoltaico y almacenamiento en bateria nuevo (PVS+BSS)	$50,286.00

Capacidad del sistema fotovoltaico		**Capacidad de almacenamiento de batería**	
8.91	kW	37.0	kWh

Tipo de instalación sistema PVS (elija según aplique). Si ya existe una estructura que se utilizará para la instalación, se debe seleccionar la opción 'Montaje en techo existente'

- ☐ Montaje en estructura liviana nueva
- ☐ Montaje en poste
- ☐ Montaje en suelo
- ☑ Montaje en techo existente

Si la propiedad participante tiene una estructura existente y no se consideró el tipo de instalación en el techo como primera alternativa, explique el motivo del tipo de instalación propuesto a continuación:

COMPONENTES DEL SISTEMA PROPUESTO

		Capacidad x unidad	**Cantidad**
Paneles fotovoltaicos:			
Incluya marca y número de modelo	Q-Cell ML-G10+ 405	405	22
Baterías:			
Incluya marca y número de modelo	Fortress eVault Max 18.5kWh	18.5	2
Inversor / Controlador de Carga:	Fortress 10kW		
Incluya marca y número de modelo	Fortress FP-ENVY-10K	10000	1

	Capacidad x unidad	Cantidad
Otros: Incluya marca y número de modelo		
Otros: Incluya marca y número de modelo		
Otros: Incluya marca y número de modelo		

DESGLOSE DE COSTOS				
Descripción		**Monto Total**		**Retenido**
Trabajos Pre-Instalación				
Diseño del proyecto	$	2,946.00	$	589.20
Permisos	$	-	$	-
Otros:	$	-	$	-
Otros:	$	-	$	-
Otros:	$	-	$	-
Subtotal - Trabajos Pre-Instalación	**$**	**2,946.00**	**$**	**589.20**
Trabajos Civil				
Preparación del lugar	$	-	$	-
Estructuras de montaje / anclaje	$	3,713.00	$	742.60
Mitigación Ambiental[1]	$	-	$	-
Otros:	$	-	$	-
Otros:	$	-	$	-
Otros:	$	-	$	-
Subtotal - Trabajos Civil	**$**	**3,713.00**	**$**	**742.60**
Trabajos de Instalación				
Módulos PVS	$	5,465.00	$	1,093.00
Baterías	$	15,969.00	$	3,193.80
Inversor / Controlador de Carga	$	4,853.00	$	970.60
Cableado	$	7,001.00	$	1,400.20
Cuota Interconección	$	1,013.00	$	202.60
Otros: Labor	$	7,564.00	$	1,512.80
Otros: Materiales Adicional (Tubería, JBox,etc)	$	846.00	$	169.20
Otros: Materiales Adicional (Midclamp, Endclamp	$	916.00	$	183.20
Subtotal - Trabajos de Instalación	**$**	**43,627.00**	**$**	**8,725.40**
Pago de Retendio				
Monto Bruto Total	$	50,286.00		
Pagos Netos	$	40,228.80		
Total de Retenido	**$**	**10,057.20**		

[1] **PARA REIC SELECCIONADO - Una vez completada la revisión ambiental y, si el Reporte de Revisión Ambiental establece que se requieren medidas de mitigación, se solicitará una cotización actualizada para incluir los costos asociados con las obras de mitigación. Debe incluirse una cotización detallada del trabajo y el costo.**

DOCUMENTOS DE APOYO REQUERIDOS	
☑	**Factura de servicio eléctrico or Estudio de Carga Eléctrica.** Factura de servicio eléctrico para la propiedad participante, incluyendo el historial de consumo, o Estudio de Carga Eléctrica certificado por un Perito Electricista o Ingeniero Eléctrico Licenciado.
☑	**Cálculo de PVWatts.** Copia del Cálculo PVWatts de NREL para la propiedad participante mostrando la capacidad máxima del sistema fotovoltaico para satisfacer el consumo anual de energía del negocio.
☑	**Fotografías del Lugar del Proyecto.** Fotografías del lugar del proyecto incluyendo estructuras existentes. Si la propiedad tiene un sistema existente, las fotografías deben mostrar claramente la ubicación y cantidad de los componentes del PVS y BSS.
☑	**Dibujo esquemático.** Un dibujo esquemático mostrando la ubicación del equipo a instalar en la propiedad participante.

A mi leal saber y entender, el abajo firmante certifica que la Cotización del Sistema del Proyecto presentada cumple con los requisitos del Programa FER. El sistema del proyecto propuesto para instalar es nuevo y está debidamente certificado de acuerdo con la Sección IV del Reglamento No. 7796. La información anterior es precisa y la documentación de apoyo requerida está incluida con este formulario de Cotización del Sistema del Proyecto para la evaluación del Dept. de la Vivienda.

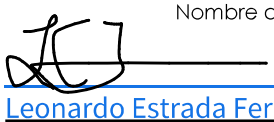
Certificado por: Elvin Camacho Gonzalez
Nombre del Representante de la Empresa

Elvin Camacho (Feb 26, 2025 11:16 AST)
Firma del Representante

2/25/2025
Fecha

El abajo firmante confirma que la Cotización del Sistema del Proyecto presentada es la seleccionada para la propiedad participante.

Certificado por: Leonardo Estrada Ferrer
Nombre del Solicitante



Leonardo Estrada Ferrer (Feb 26, 2025 13:00 AST)
Firma del Solicitante

2/25/2025
Fecha

INFORMACION SOBRE SISTEMA PROPUESTO

La siguiente información se utilizará en el proceso de evaluación ambiental inicial de requerirse alguna alteración del terreno para la instalación del

INSTRUCCIONE
S:

•Ambas preguntas deben ser contestadas.

• De contestarse que "SI" a alguna de las preguntas, es importante que se incluya la información/ documentación adicional solicitados.

¿Se instalarán nuevas líneas eléctricas en la propiedad participante?

- ☐ Si
- ☑ No

De contestar que SI, ¿serán aéreas o subterráneas?

- ☐ Aéreas
- ☐ Subterráneas - de ser así proveer:
  - ☐ imagen aérea indicando la ubicación propuesta.

¿Se vertirá una losa de concreto?

- ☐ Si
- ☑ No

De contestar que SI, proveer la siguiente información:

- ☐ Coordenadas de la ubicación de la losa: _____
- ☐ Medidas de la losa: _____
- ☐ Someter imagen aerea donde se muestre la ubicación de la losa

Completado por: Elvin Camacho Gonzalez
Nombre Representante de la Empresa Instaladora

Elvin Camacho (Feb 26, 2025 11:16 AST)
Firma del Representante

2/25/2025
Fecha

NREL

NATIONAL RENEWABLE ENERGY LABORATORY

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at //sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

The energy output range is based on analysis of 30 years of historical weather data, and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

12,915 kWh/Year*

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)
January	4.84	1,014
February	5.36	1,011
March	5.41	1,109
April	5.46	1,078
May	5.89	1,212
June	5.71	1,136
July	5.57	1,147
August	5.51	1,135
September	5.29	1,047
October	5.19	1,069
November	4.73	957
December	4.76	1,001
Annual	**5.31**	**12,916**

User Comments

Leonardo Estrada Ferrer

Location and Station Identification

Requested Location	18.071954, -67.015141
Weather Data Source	Lat, Lng: 18.09, -67.02 1.3 mi
Latitude	18.09° N
Longitude	67.02° W

PV System Specifications

DC System Size	8.91 kW
Module Type	Standard
Array Type	Fixed (roof mount)
System Losses	14.08%
Array Tilt	10°
Array Azimuth	180°
DC to AC Size Ratio	1.2
Inverter Efficiency	96%
Ground Coverage Ratio	0.4
Albedo	*From weather file*
Bifacial	No (0)
Monthly Irradiance Loss	Jan 0% Feb 0% Mar 0% Apr 0% May 0% June 0% July 0% Aug 0% Sept 0% Oct 0% Nov 0% Dec 0%

Performance Metrics

DC Capacity Factor	16.5%

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WHOLE HOME SOLAR STORAGE INVERTER

FORTRESS POWER ENVY 8/10K

- All-In-One Solution (PV, Generator, On/Off Grid)
- Max. 12kW PV Power Delivered to Battery & AC Outputs
- 8K (33.3A @ 240V, 38.5A @ 208V) Backup Power
  10k (41.6A @ 240V, 48A @ 208V) Backup Power
- Built-in APsmart Rapid Shutdown Transmitter and Button
- Built in 63 Amp AC Breakers for Grid in, Load & Generator
- Built in 250 Amp DC Battery Breaker

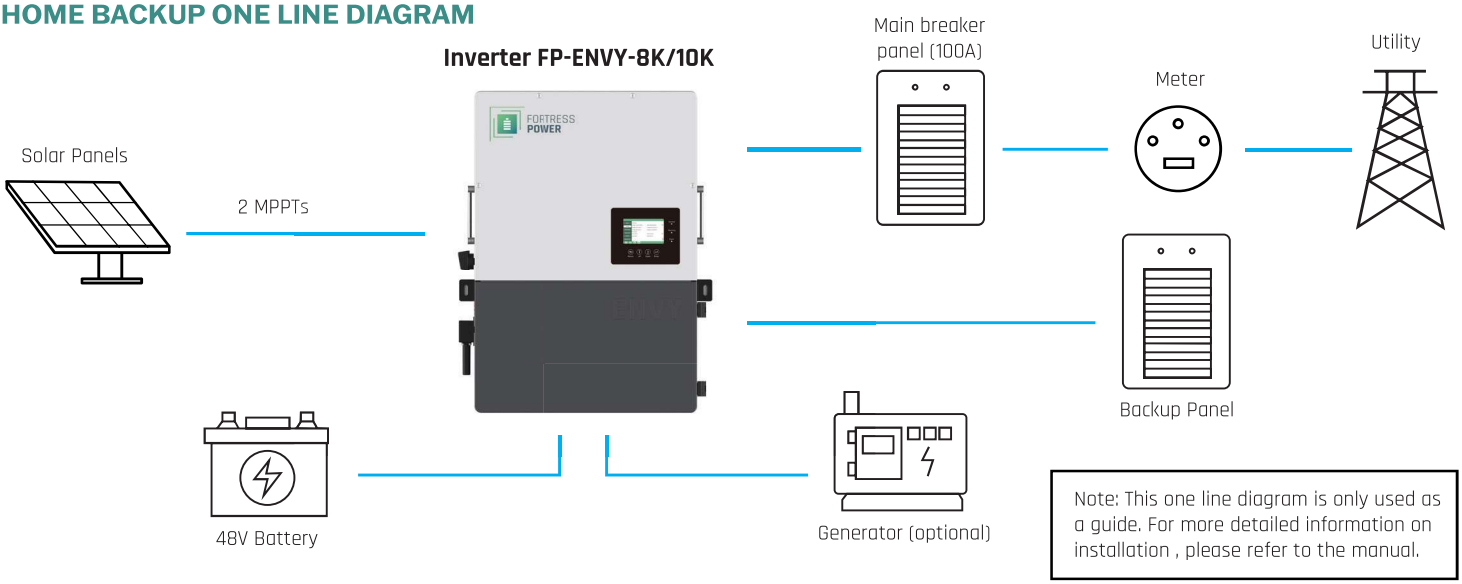
KEY FEATURES:

- IP65 rated for indoor & outdoor installations
- 8K: 2 MPPTs output for max Input 13KW PV array
  10K: 2 MPPTs output for max Input 15KW PV array
- AC, DC and AC/DC combined coupling
- 120/240V, 120/208V & 208V 3 Phase capable
- Built-in Generator Input
- 10 units in parallel
- Local and remote monitoring/app
- Color LCD touch screen
- Batch Settings

SUPPORTED APPLICATIONS:

- ✓ BACKUP
- ✓ OFF-GRID
- ✓ ZERO EXPORT
- ✓ TIME-OF-USE
- ✓ VIRTUAL POWER PLANT READY
- ✓ PEAK SHAVING
- ✓ NET METERING
- ✓ SMART LOAD
- ✓ MICROGRID

HOME BACKUP ONE LINE DIAGRAM



Note: This one line diagram is only used as a guide. For more detailed information on installation , please refer to the manual.

	FP-ENVY-8K	FP-ENVY-10K
Input DC (PV Side)		
Max. DC Input Power for Single MPPT	6000W / 6000W	6000W / 6000W
Max. PV Input Power	13000W	15000W
Max. PV Power Delivered to Battery & AC Outputs	12000W	12000W
DC Input Voltage Range	100V-600V (550V Max Recommended)	100V-600V (550V Max Recommended)
Nominal DC Input Voltage	360V	360V
Full Power MPPT Voltage Range	170V-500V	210V- 500V
Max. DC Input Current	25A / 25A	25A / 25A
Max. Short Circuit Input Current	31A / 31A	31A / 31A
MPPT Number/(Strings per MPPT)	2 / 2	2 / 2
Output/Input AC (Grid)		
Continuous AC Power to Grid	8000W (240V), 8000W (208V)	10000W (240V), 10000W (208V)
Continuous AC Power to Load w/ Grid or Generator	14400W (240V) AC Passthrough/ 12000W (240) GEN	14400W (240V) AC Passthrough/ 12000W GEN
Nominal Output Voltage	120V/240V, 120V/208V, 208V 3 Phase	120V/240V, 120V/208V, 208V 3 Phase
Max. Continuous AC Current	33.3A @ 240V, 38.5A @ 208V	41.6A @ 240V, 48A @ 208V
Nominal AC Frequency	50Hz/60Hz	50Hz/60Hz
Output AC (Off-Grid)		
Max. Output Power	8000W (240V), 8000W (208V)	10000W (240V), 10000W (208V)
Nominal Output Voltage	120V/240V	120V/240V
Nominal Output Frequency	50Hz/60hZ	50Hz/60hZ
Nominal Output Current	33.3A @ 240V, 38.5A @ 208V	41.6A @ 240V, 48A @ 208V
Peak Power	16kW / 500ms	20kW / 500ms
Switching Time	<20 ms	<20 ms
Dedicated Auto-start Generator Port	50A / 12kW	50A / 12kW
Battery Parameters		
Compatible Battery Type	eVault Max, eFlex, LFP-10 MAX, Other Lithium Batteries (Open-Loop), Lead Acid	eVault Max, eFlex, LFP-10 MAX, Other Lithium Batteries (Open-Loop), Lead Acid
Nominal Battery Voltage	48V	48V
Battery Voltage Range	40V-60V	40V-60V
Maximum Charging/Discharging Current	167A	210A
Maximum Charging/Discharging Power	8000W	10000W
Efficiency		
MPPT Efficiency	99.9%	99.9%
Max. Efficiency	97.5%	97.5%
CEC Efficiency	96.5%	96.5%
Protection		
Anti-islanding Protection	YES	YES
DC Switch	YES	YES
Ingress Protect Degree	NEMA 4X, IP65	NEMA 4X, IP65
SPD Protection	YES	YES
AFCI	YES	YES
RSD	Built-in APsmart Transmitter Also Compatible with Tigo Transmitters (refer to manual)	Built-in APsmart Transmitter Also Compatible with Tigo Transmitters (refer to manual)
General Data		
Dimensions	29.5 x 20.5 x 11.23 in (750 x 520 x 285 mm)	29.5 x 20.5 x 11.23 in (750 x 520 x 285 mm)
Weight	110 lbs (50 kg)	110 lbs (50 kg)
Display	Color Touch LCD	Color Touch LCD
Ambient Temperature Range	-13 to 140 °F (-25 to 60 °C)	-13 to 140 °F (-25 to 60 °C)
Cooling	FAN	FAN
Communication	RS485/Wi-Fi/CAN	RS485/Wi-Fi/CAN
Standard & Certification		
Certifications	UL1741, UL1741SB, IEEE1547A, rule 21, ISO-NE, FCC15 class B, HECO, CEC, Luma, SGIP, NOM	UL1741, UL1741SB, IEEE1547A, rule 21, ISO-NE, FCC15 class B, HECO, CEC, Luma, SGIP, NOM
Warranty	10 Years	10 Years

Intertek

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eVault Max 18.5 Lithium Battery Storage

UL 9540
UL 9540A
UL 1973

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We Provide You The Largest Single Residential Battery On The Market With Easy Installation!

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- High Durability and Long-Lasting
- Closed Loop Communication with Inverters
- Scalable from 18.5 kWh - 370 kWh
- Intelligent Digital Processor Based Battery Management System (BMS)
- Advanced cell level monitoring and balancing
- IP55 Aluminum Industrial Grade Enclosure
- Touch screen LCD performance display

Electrical Specifications	
Nominal Voltage	51.2V
Nominal Capacity	360AH
Rated Capacity @ 0.5C (180A)	18.43 kWh
Resistance	<10 mΩ
Communication Protocol	CAN/RS485
Efficiency (at 0.5C)	98%
Cell Self-Discharge	<1 % / Month
Maximum Allowed Modules in Parallel	20 (370 kWh)
Depth of Discharge	Up to 100%
Warranty	10 Years
Cycle Life	8,000 (@ 80% DoD)

Charge Specifications	
Recommended Charge Current	150A
Maximum Charge Current	180A
Recommended Charge Voltage	54.4V
BMS Charge Voltage Disconnect	>56V

Discharge Specifications	
Recommended Continuous Discharge Rate	180A (9.2 KW)
Peak Discharge Rate	230A (12 KW 30 min)
Maximum Surge Power Rate	250A (12.8 kW 5 sec)
Recommended Low Voltage Disconnect	48V
Battery Low Voltage Protection	<46V
Battery Recovery Voltage	47V

Mechanical Specifications	
Dimensions: (L*W*H)	20.3" x 20.3" x 42.2" (515 x 515 x 1073mm)
Weight	520 lbs (235.87 kg)
Terminal Type	M10
Ring Terminal Size	1/2" or larger
Terminal Torque	7.0 - 7.7 Nm (5.1 - 5.7 ft - lb)
Case Material	Industrial Grade Aluminum
Enclosure Protection	IP55
Cell Type Chemistry	Tier 1 Automotive Prismatic - $LiFePO_4$

Compliance Specifications:	
Certifications	UL1642, UL1973, UL9540, UL9540A, CEC, SGIP
Shipping Classification	UN 38.3. UN 3480, Class 9

Basic Charging Profile	
Bulk + Absorb Charge	54.4V
Absorb Time	60 Minutes
Float Charge	54V
Inverter Charging	2 Stage / No Float
Equalization	No equalization (typical) 54.6V for 10 seconds (rare)
Temperature Compensation	None

Temperature Specifications	
Discharge Temperature	-4°F~140°F (-20°C ~ 60°C)
Charge Temperature	32°F ~ 120°F (0°C ~ 49°C)
Storage Temperature	6 months: 14°F ~ 77°F (-10°C ~ 25°C) 3 months: -4°F ~ 113°F (-20°C ~ 45°C)

ETL LISTED Intertek

Do not mix with lead acid batteries when recycling.

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ABOUT FORTRESS POWER

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Our logistics centers located across the country offer easy distribution to all of our major markets. Fortress Power's high-performance solar lithium battery storage products are designed, engineered and inventoried along with live technical support in the United States.

Fortress Power has partnered with industry leading lending institutions to help make your solar investment as easy as possible.

Please visit our website for purchasing and financing options.
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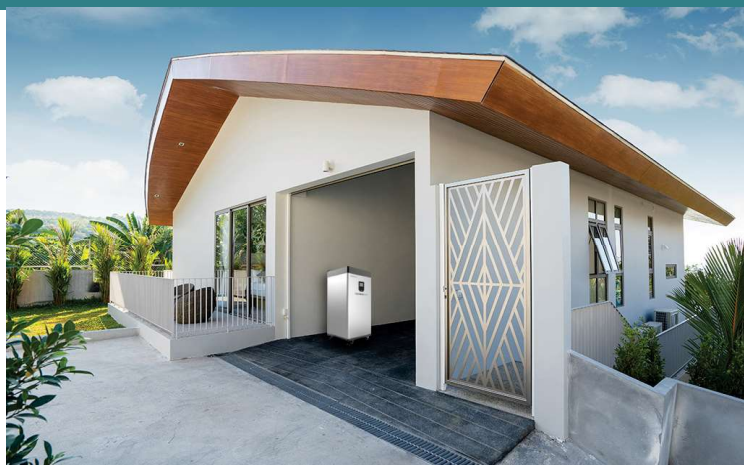
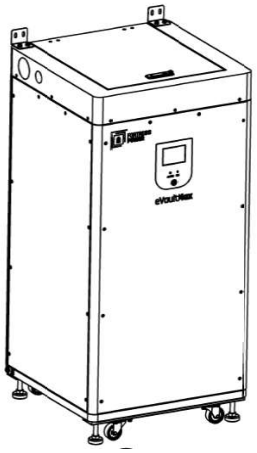
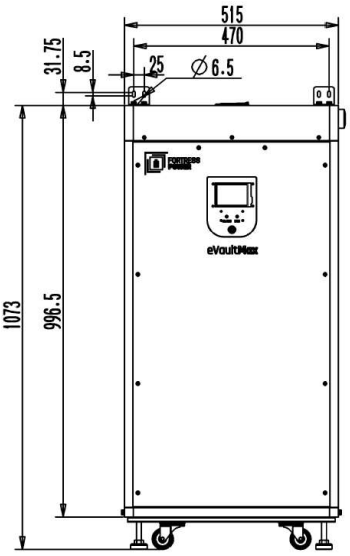
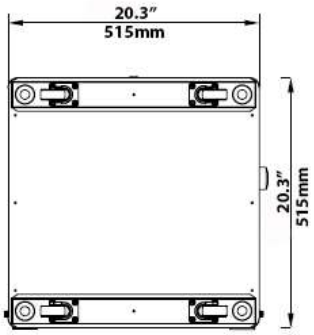
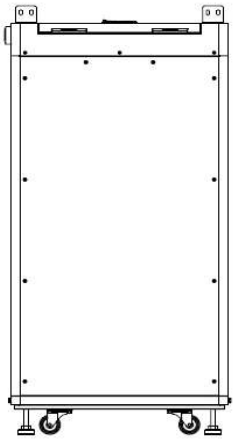


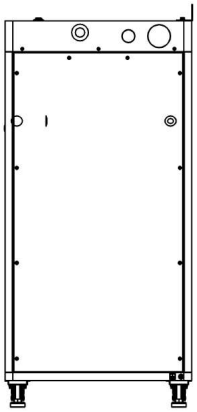




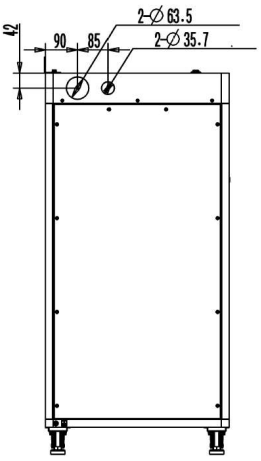




back view



side view



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Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology[2] and Hot-Spot Protect.

Extreme weather rating

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).

Innovative all-weather technology

Optimal yields, whatever the weather with excellent low-light and temperature behaviour.

The most thorough testing programme in the industry

Qcells is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.

[1] See data sheet on rear for further information.
[2] APT test conditions according to IEC/TS 62804-1:2015, method A (–1500 V, 96 h)

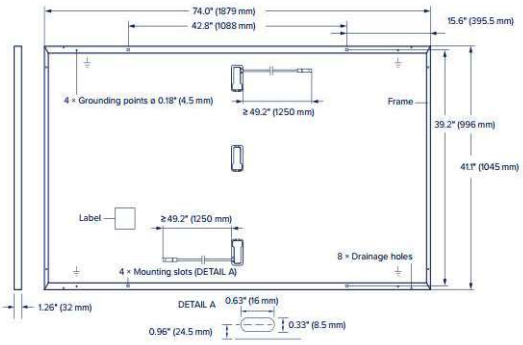
The ideal solution for:

Rooftop arrays on residential buildings

Q.PEAK DUO BLK ML-G10+ SERIES

Mechanical Specification

Format	74.0 in × 41.1 in × 1.26 in (including frame) (1879 mm × 1045 mm × 32 mm)
Weight	48.5 lbs (22.0 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 22 monocrystalline Q.ANTUM solar half cells
Junction box	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥ 49.2 in (1250 mm), (−) ≥ 49.2 in (1250 mm)
Connector	Stäubli MC4; IP68

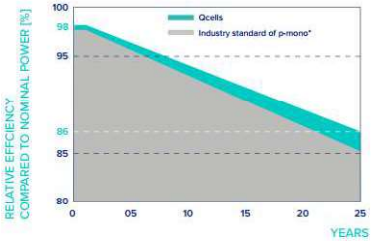


Electrical Characteristics

POWER CLASS			385	390	395	400	405	410
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / −0 W)								
Minimum	Power at MPP[1]	P_{MPP} [W]	385	390	395	400	405	410
	Short Circuit Current[1]	I_{SC} [A]	11.04	11.07	11.10	11.14	11.17	11.20
	Open Circuit Voltage[1]	V_{OC} [V]	45.19	45.23	45.27	45.30	45.34	45.37
	Current at MPP	I_{MPP} [A]	10.59	10.65	10.71	10.77	10.83	10.89
	Voltage at MPP	V_{MPP} [V]	36.36	36.62	36.88	37.13	37.39	37.64
	Efficiency[1]	η [%]	≥ 19.6	≥ 19.9	≥ 20.1	≥ 20.4	≥ 20.6	≥ 20.9
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[2]								
Minimum	Power at MPP	P_{MPP} [W]	288.8	292.6	296.3	300.1	303.8	307.6
	Short Circuit Current	I_{SC} [A]	8.90	8.92	8.95	8.97	9.00	9.03
	Open Circuit Voltage	V_{OC} [V]	42.62	42.65	42.69	42.72	42.76	42.79
	Current at MPP	I_{MPP} [A]	8.35	8.41	8.46	8.51	8.57	8.62
	Voltage at MPP	V_{MPP} [V]	34.59	34.81	35.03	35.25	35.46	35.68

[1]Measurement tolerances P_{MPP} ±3%; I_{SC}; V_{OC} ±5% at STC: 1000 W/m², 25±2 °C, AM 1.5 according to IEC 60904-3 • [2]800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY

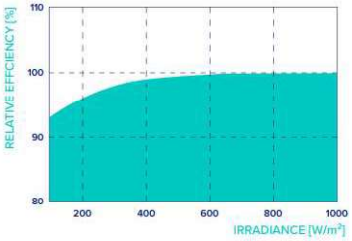


At least 98% of nominal power during first year. Thereafter max. 0.5% degradation per year. At least 93.5% of nominal power up to 10 years. At least 86% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

*Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	−0.27
Temperature Coefficient of P_{MPP}	γ	[%/K]	−0.34	Nominal Module Operating Temperature	NMOT	[°F]	109±5.4 (43±3 °C)

Properties for System Design

Maximum System Voltage	V_{SYS}	[V]	1000 (IEC) / 1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating		[A DC]	20	Fire Rating based on ANSI / UL 61730	TYPE 2
Max. Design Load, Push / Pull[3]		[lbs / ft²]	75 (3600 Pa) / 55 (2660 Pa)	Permitted Module Temperature on Continuous Duty	−40 °F up to +185 °F (−40 °C up to +85 °C)
Max. Test Load, Push / Pull[3]		[lbs / ft²]	113 (5400 Pa) / 84 (4000 Pa)		

[3] See Installation Manual

Qualifications and Certificates

UL 61730, CE-compliant,
Quality Controlled PV - TÜV Rheinland,
IEC 61215:2016, IEC 61730:2016,
U.S. Patent No. 9,893,215 (solar cells),

C Certified US UL 61730 CE TÜVRheinland CERTIFIED www.tuv.com ID 1111220277

Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.
Hanwha Q CELLS America Inc. 400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL hqc-inquiry@qcells.com | WEB www.qcells.com

qcells

SOLARMOUNT

UNIRAC

SOLARMOUNT is the professionals' choice for residential PV mounting applications. Every aspect of the system is designed for an easier, faster installation experience. **SOLAR**MOUNT is a complete solution with revolutionary universal clamps, **FLASHKIT** PRO, full system UL 2703 certification and 25-year warranty. Not only is **SOLAR**MOUNT easy to install, but best-in-class aesthetics make it the most attractive on any block!

New & Improved:

THE PROFESSIONALS' CHOICE

With Superior Aesthetics

NOW FEATURING FLASHKIT PRO

The Complete Roof Attachment Solution

FEATURING SHED & SEAL TECHNOLOGY

NOW WITH UNIVERSAL MIDCLAMPS

Accommodates 30mm-51mm module frames

One tool, one-person installs are here!

REVOLUTIONARY NEW ENDCLAMPS

Concealed design and included End Caps

THE PROFESSIONALS' CHOICE FOR RESIDENTIAL RACKING

BEST INSTALLATION EXPERIENCE • CURB APPEAL • COMPLETE SOLUTION • UNIRAC SUPPORT

FOR QUESTIONS OR CUSTOMER SERVICE VISIT UNIRAC.COM OR CALL (505) 248-2702

SOLARMOUNT

UNIRAC

BETTER DESIGNS

TRUST THE INDUSTRY'S BEST DESIGN TOOL

Start the design process for every project in our U-Builder on-line design tool. It's a great way to save time and money.

BETTER SYSTEMS

ONE SYSTEM - MANY APPLICATIONS

Quickly set modules flush to the roof on steep pitched roofs. Orient a large variety of modules in Portrait or Landscape. Tilt the system up on flat or low slow roofs. Components available in mill, clear, and dark finishes to optimize your design financials and aesthetics.

BETTER RESULTS

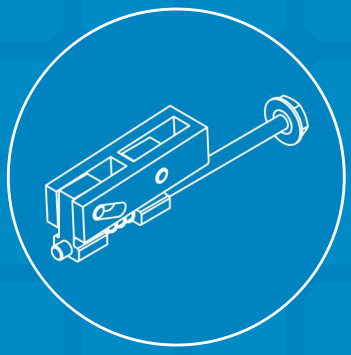
MAXIMIZE PROFITABILITY ON EVERY JOB

Trust Unirac to help you minimize both system and labor costs from the time the job is quoted to the time your teams get off the roof. Faster installs. Less Waste. More Profits.

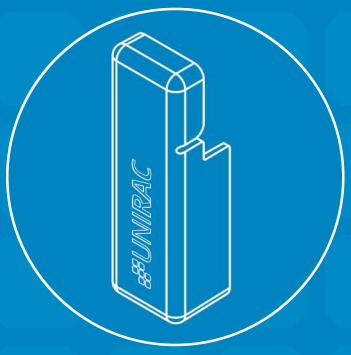
BETTER SUPPORT

WORK WITH THE INDUSTRIES MOST EXPERIENCED TEAM

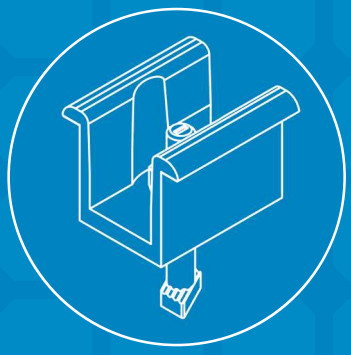
Professional support for professional installers and designers. You have access to our technical support and training groups. Whatever your support needs, we've got you covered. Visit Unirac.com/solarmount for more information.



CONCEALED UNIVERSAL ENDCLAMPS



END CAPS INCLUDED WITH EVERY ENDCLAMP



UNIVERSAL SELF STANDING MIDCLAMPS

U-BUILDER ONLINE DESIGN TOOL SAVES TIME & MONEY

Visit design.unirac.com

LISTED **UL2703**

BONDING & GROUNDING
MECHANICAL LOADING
SYSTEM FIRE CLASSIFICATION

UNIRAC CUSTOMER SERVICE MEANS THE HIGHEST LEVEL OF PRODUCT SUPPORT

UNMATCHED EXPERIENCE	CERTIFIED QUALITY	ENGINEERING EXCELLENCE	BANKABLE WARRANTY	DESIGN TOOLS	PERMIT DOCUMENTATION

TECHNICAL SUPPORT

Unirac's technical support team is dedicated to answering questions & addressing issues in real time. An online library of documents including engineering reports, stamped letters and technical data sheets greatly simplifies your permitting and project planning process.

CERTIFIED QUALITY PROVIDER

Unirac is the only PV mounting vendor with ISO certifications for 9001:2008, 14001:2004 and OHSAS 18001:2007, which means we deliver the highest standards for fit, form, and function. These certifications demonstrate our excellence and commitment to first class business practices.

BANKABLE WARRANTY

Don't leave your project to chance, Unirac has the financial strength to back our products and reduce your risk. Have peace of mind knowing you are providing products of exceptional quality. SOLARMOUNT is covered by a 25 year limited product warranty and a 5 year limited finish warranty.

ENHANCE YOUR REPUTATION WITH QUALITY RACKING SOLUTIONS BACKED BY ENGINEERING EXCELLENCE AND A SUPERIOR SUPPLY CHAIN

PUB2018AUG31 - PRINTED UPDATE

FOR QUESTIONS OR CUSTOMER SERVICE VISIT UNIRAC.COM OR CALL (505) 248-2702

Su factura de electricidad

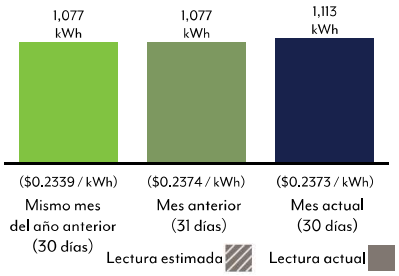
Para el periodo del 12 de septiembre de 2024 al 12 de octubre de 2024

MONE GARCIA,ALEXANDRA M
Su número de cuenta: 6333621000
Fecha de expedición de esta factura: 12 de octubre de 2024
Ciclo de facturación: 12

Consejo Para Ahorrar Energía: *¿Cuáles son los beneficios de ahorrar energía? Una factura más económica para usted y energía más confiable para todos. Si trabajamos juntos para reducir nuestro consumo energético, podremos reducir la demanda sobre la red. Esto ayudará a mantener las luces encendidas para todos. Para conocer más, visite: lumapr.com/residencial/ahorrando-energia-y-dinero.*

CANTIDAD TOTAL ADEUDADA	FECHA DE VENCIMIENTO	CONSUMO DE kWh
$264.12	14 nov 2024	1,113 kWh

SU CONSUMO DE ENERGÍA



COMPARACIÓN

Este mes, usted consumió:

3.3% más energía
en comparación con el mes anterior

y

3.3% más energía
en comparación con el año anterior

PROMEDIOS

Costo promedio por día
$8.80

Promedio de consumo diario
37 kWh

Costo promedio de 12 meses por kWh
$0.2323

¡En LUMA trabajamos para ti!

¿Necesita más tiempo para pagar su factura? Estamos aquí para ofrecerle soluciones, incluyendo planes de pago flexibles, que podrían estar disponibles para usted y su familia. Para más información, contacte a un representante de servicio al cliente hoy al 1-844-888-5862.

Transformación del sistema eléctrico

¡Cuídese y proteja a su familia de los estafadores! LUMA nunca lo llamará para solicitarle un pago por teléfono. Para más consejos, visite lumapr.com/combatiendoelfraude.

PARA EMERGENCIAS O INTERRUPCIONES EN EL SERVICIO
1-844-888-LUMA (5862)

DIRECCIÓN POSTAL DE LUMA:
PO BOX 363508
San Juan PR 00936-3508

PARA PAGOS Y CONSULTAS
1-844-888-LUMA (5862)

PARA FACTURACIÓN Y MÁS
WWW.LUMAPR.COM

LUMA Energy
PO BOX 363508
San Juan PR 00936-3508

Ley 57-2014, según enmendada: Todos los clientes tienen hasta la fecha de vencimiento para pagar la factura o presentar una objeción a los cargos en la factura. Detalles al dorso.

Incluya este talonario con su pago. No mutile, doble, grape, manche, escriba (excepto la cantidad a pagar) ni use cinta adhesiva en el talonario de pago.

Cuenta: 6333621000
Cantidad adeudada: $264.12
Fecha de vencimiento:
14 de noviembre de 2024

Cantidad incluida:

MONE GARCIA,ALEXANDRA M
PO BOX 3027
LAJAS PR 00667-3027

LS-10/12/24-9368

00063336210000 000026412 000026412 8

¿Cuáles son los cargos por su servicio eléctrico?

Los cargos por su servicio eléctrico incluyen los siguientes:

- Cargo por Cliente
- Cargo por Energía
- Cargo por Demanda (si es aplicable)
- Las Cláusulas de Reconciliación y Riders

Los Cargos por Cliente tienen el propósito de recuperar los gastos que son independientes del consumo y la demanda de energía de los clientes. Estos son:

- La lectura de contadores
- Facturación
- Gastos administrativos
- Servicios al cliente y
- Gastos relacionados con la toma de servicio y el medidor

Los Cargos por Energía y Demanda tienen el propósito de recuperar los gastos de:

- Generar, transmitir y distribuir la energía eléctrica

Las Cláusulas de Reconciliación y Riders están destinadas a recuperar gastos, subsidios, aportaciones y contribuciones aprobados por el Negociado de Energía que no se recuperan en los cargos anteriores. Es posible que estos cargos no apliquen a todos los tipos de clientes:

- Ajuste de Cargo por Compra de Combustible (FCA)
- Ajuste de Cargo por Compra de Energía (PPCA)
- Contribución en Lugar de Impuestos (CELI-CILTA)
- Subsidios Alumbrado Público (Municipal)
- Otras Subvenciones
- Cargo Eficiencia Energética (EE)
- Descuentos por Subsidios y
- Crédito Medición Neta (NM) (si es aplicable)

Para una lista completa y desglose detallado de estos cargos, visite la página web **www.lumapr.com** o visite las oficinas de servicio al cliente de LUMA.

Subsidios, Alumbrado Público (Municipal) y Otras Subvenciones

- Crédito por Consumo de Equipo Eléctrico Necesario Para Preservar la Vida
- Tarifa Servicio Residencial Para Proyectos Públicos – RH3
- Tarifa Servicio Residencial Especial – LRS (Programa de Asistencia Nutricional)
- Tarifa Fija para Residenciales Públicos bajo la Titularidad de la Administración de Vivienda Publica – RFR
- Subsidio de Combustible Residencial
- Alumbrado Público (Municipal)

Para una lista completa y desglose detallado de todos los Subsidios, visite la página web **www.lumapr.com** o visite las oficinas de servicio al cliente de LUMA.

Usted tiene el derecho de objetar y pedir una investigación de su factura.

Usted (cliente) tiene el derecho a objetar la cantidad facturada y solicitar una investigación de su factura. Si usted objeta o presenta una solicitud de investigación a tiempo, su servicio no será afectado. Usted tendrá hasta la fecha de vencimiento de su factura para pagarla o para presentar su objeción o solicitud de investigación.

Para poder objetar o solicitar una investigación, usted deberá pagar la cantidad correspondiente al promedio de las facturas que no han sido objetadas durante los seis (6) meses anteriores. En caso de que no haya un historial de facturas no objetadas de al menos seis (6) meses, usted deberá pagar la cantidad correspondiente al promedio de las facturas previas que no hayan sido objetadas. Si el promedio de las facturas anteriores no objetadas es mayor a la factura objetada, usted deberá pagar el monto de la factura objetada.

En caso de que la factura objetada sea la primera factura emitida en su cuenta, usted deberá pagar una suma equivalente al depósito requerido al momento de suscribir su contrato de servicio eléctrico con LUMA o el monto de la factura objetada, lo que sea menor. Usted puede presentar su solicitud de objeción o investigación de la factura de cualquiera de las siguientes maneras:

- Personalmente en la oficina de servicio al cliente más cercana
- A través de Mi LUMA en la página web **www.lumapr.com**
- Por teléfono a 1-844-888-LUMA (5862) Por correo al PO Box 9100, San Juan, PR 00908-9100

Negociado de Energía de Puerto Rico (NEPR)

Usted puede contactar al NEPR de cualquiera de las siguientes maneras:

- Accediendo a la Página Web www.energia.pr.gov
- Por teléfono al 787-523-6262
- Por correo electrónico a nepr@jrsp.pr.gov
- Por correo postal al Edificio World Plaza, 268 Avenida Muñoz Rivera, Nivel Plaza, Suite 202, San Juan, PR 00918

Oficina Independiente de Protección al Consumidor (OIPC)

La **OIPC** educa, orienta, asiste y representa a los consumidores de energía en Puerto Rico. Si tiene alguna situación con su proveedor de energía, puede contactar al **OIPC de cualquiera de las siguientes maneras:**

- A través de su sitio web www.oipc.pr.gov
- Por correo electrónico a **info@oipc.pr.gov**
- Por correo postal al 500 Ave. Roberto H. Todd San Juan, PR 00907-3941
- Por teléfono al 787-523-6962
- Por fax al 787-523-6961

Las horas de operación de la OIPC son de lunes a viernes de 8:30 am a 5 pm

Términos de Servicio

LUMA es regulada por el Negociado de Energía de Puerto Rico (NEPR). Como parte de los términos que rigen el servicio que se le provee a los clientes, el NEPR aprobó Términos de Servicio que incluyen un relevo de responsabilidad a la Autoridad de Energía Eléctrica y LUMA por ciertas pérdidas relacionadas con la operación del sistema de transmisión y distribución y el suministro de energía y electricidad. Estos Términos de Servicio requieren que LUMA haga todos los esfuerzos razonables para minimizar ciertos eventos de restricción, suspensión, interrupción o reducción de servicios en la medida que sea razonablemente posible, proveer un servicio eficiente y confiable a sus clientes y mantener la continuidad del servicio, pero no puede garantizar un suministro de electricidad ininterrumpido a sus clientes. Le exhortamos a que visite nuestra página de Internet en www.lumapr.com o una oficina de servicio al cliente para acceder a estos Términos de Servicio, dado que incluyen información importante y rigen situaciones que pudieran surgir con su cuenta o el servicio. En cualquier momento por favor contacte a LUMA para hablar de su servicio.

FORMAS DE PAGO

Para su conveniencia, LUMA ofrece varias formas de pago.

- Pague en línea a través de **www.lumapr.com**
- Llame a nuestra línea de pago automatizada al **1-844-888-LUMA (5862)**
- Envíe el pago por correo junto con el talonario provisto en esta factura
- Visite su oficina local de LUMA

SI TIENE UN BALANCE VENCIDO

Cuando hace pagos a tiempo, usted mantiene y protege su crédito. Los pagos parciales no evitarán la suspensión del servicio de energía eléctrica si todavía hay pagos en atraso y procede tal suspensión. Las cuentas que sean finales y que no se hayan pagado a tiempo, podrán ser referidas a una agencia de crédito, excepto por aquellos cargos en atraso que hayan sido debidamente objetados y estén bajo evaluación o adjudicación o para los cuales se esté cumpliendo con un plan de pago aprobado. Para pagar su balance vencido contáctenos al 1-844-888-LUMA (5862).

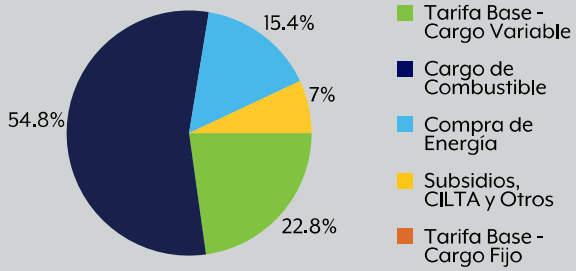
LS-10/12/24-9368

La instalación de un equipo para generar energía de fuentes renovables puede ayudarle a reducir su factura de electricidad y LUMA, mediante sus oficinas comerciales o por Internet, le suministrará información sobre cómo puede cualificar para ingresar al programa de medición neta. Además, existen beneficios contributivos para incentivar la compra de esos equipos sobre los que puede obtener más información en el Programa de Política Pública Energética.

DETALLE DE LA CUENTA

Balance		**$0.00**
Cantidad adeudada del periodo anterior	*$255.63*	
Pagos acreditados	*-$255.63*	
Cargos corrientes		**$264.12**
Cantidad Total Adeudada		**$264.12**

DESGLOSE DEL CARGO DE ELECTRICIDAD



Depósito(s) o bono(s) recibido(s): $100.00

INFORMACIÓN DEL MEDIDOR Y DEL SERVICIO

Dirección del servicio: CAR 118 K4 H7 BO RETIRO TEA SAN GERMAN PR 00683 **ID localidad:** 2206031556

Tarifa: Servicio Residencial General **Periodo:** 12-sep-2024 a 12-oct-2024 **Próxima lectura:** 12-nov

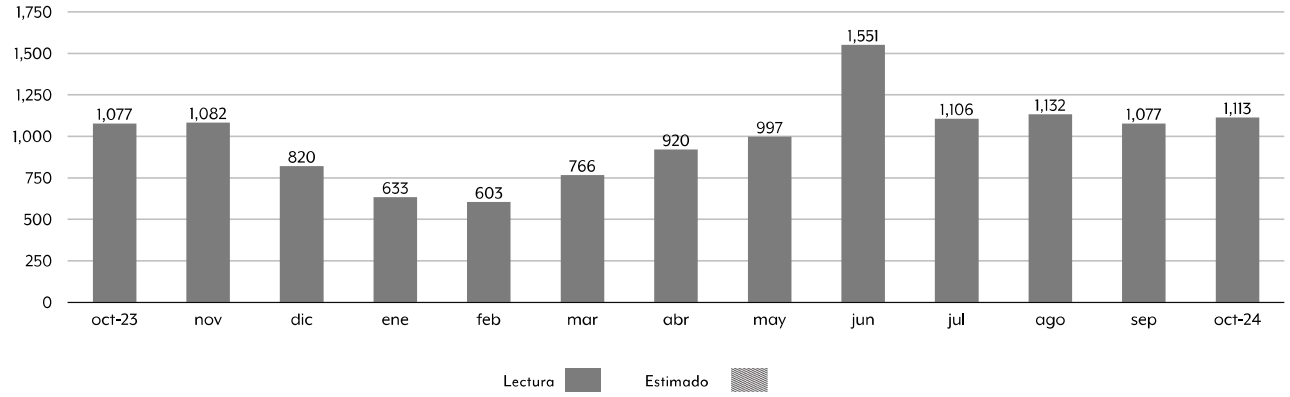
Número de contador	Fecha de lectura	Lectura actual	Fecha de lectura anterior	Lectura anterior	Consumo		Constante
					kWh	Días	
55124122	12-oct	77350.00 L	12-sep	76237.00	1,113.00	30	1

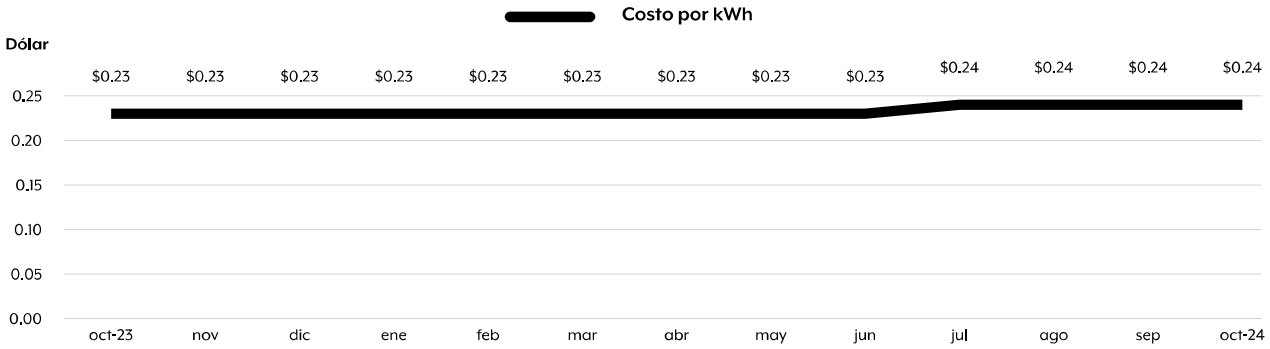
DETALLE DE LOS CARGOS CORRIENTES

DESCRIPCIÓN	TARIFA	CARGO
Cargos por Servicio		
Cargo por Cliente		$4.00
Cargo por Consumo	425 kWh x $0.04944	$21.01
Cargo por Consumo Adicional	688 kWh x $0.05564	$38.28
Subtotal		**$63.29**
Cláusulas de Reconciliación		
Cláusula FCA-Ajuste Cargo de Combustible	1,113 kWh x $0.128051	$142.52
Cláusula PPCA-Ajuste por Compra de Energía	1,113 kWh x $0.036023	$40.09
Cláusula CILTA-CELI (Municipios)	1,113 kWh x $0.003755	$4.18
Cláusula SUBA-Subsidios HH	1,113 kWh x $0.010847	$12.07
Cláusula SUBA-Subsidios NHH	1,113 kWh x $0.000916	$1.02
Cláusula EE-Cargo Eficiencia Energética	1,113 kWh x $0.000853	$0.95
Subtotal		**$200.83**
Total		**$264.12**

HISTORIAL DE CONSUMO (KWH)

ID localidad: 2206031556





Leonardo Estrada Ferrer

3XFM+2W6, PR-118, San Germán, 00683, Puerto Rico

8.91 kWp

(18.07195 , -67.01514)

Scan the QR code to view a 3D model of your roof with the PV system installed (or click the 'View 3D Model' button).

View 3D Model

Leonardo Estrada Ferrer

Arka 360

Generated on 11 Dec, 2024 | 10:39 AM

nazario@ionleed.com
787-381-2448

System Metrics

ANNUAL PRODUCTION	PERFORMANCE RATIO	SPECIFIC GENERATION
13.79	77.39%	1,547.90
x 1000 kWh (Units)		kWh/kWp/year

Module DC Nameplate

8.91 kWp

AC Nameplate

10.00 kW

DC-AC Ratio

0.89

Weather Dataset

Meteonorm

nazario@ionleed.com
787-381-2448

Components

Your installation uses latest technology in solar

Modules

Hanwha Q CELLS Q.PEAK DUO BLK ML-G10+(385-405)W Q.PEAK DUO BLK ML-G10+(405-405)W	22

Inverters

FP-ENVY-10K FORTRESS POWER	1

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Expected Annual Production

During the first year of operations, your system is expected to produce 13.79 x 1000 kWh.

Expected average generation of the system

1,149.34 kWh/month

Yearly degradation rate

1.5%/year

Monthly Table

Months	Direct Irradiance (kWh/m2)	Diffused Irradiance (kWh/m2)	Effective Irradiance (kWh/m2)	DC Energy (kWh)	AC Energy (kWh)	Specific Generation	Performance Ratio
January	140.36	54.89	156.95	1,129.31	1,073.30	120.46	76.75
February	141.39	57.24	153.13	1,113.84	1,058.60	118.81	77.59
March	180.96	72.32	188.58	1,375.18	1,306.97	146.69	77.79
April	186.17	73.08	186.73	1,356.60	1,289.31	144.70	77.49
May	194.30	83.08	189.46	1,374.97	1,306.77	146.66	77.41
June	185.21	90.67	178.83	1,302.54	1,237.94	138.94	77.69
July	174.50	91.93	169.76	1,237.38	1,176.00	131.99	77.75
August	174.33	89.45	172.97	1,257.26	1,194.90	134.11	77.53
September	152.24	77.30	155.46	1,129.22	1,073.21	120.45	77.48
October	147.29	73.92	155.46	1,123.40	1,067.68	119.83	77.08
November	132.41	60.03	145.57	1,052.03	999.85	112.22	77.09
December	129.93	46.99	146.88	1,060.11	1,007.53	113.08	76.99
Annual	1,939.09	870.90	1,999.78	14,511.86	13,792.06	1,547.94	77.39

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Field Segments

Name	Orientation	Tilt	Azimuth	Row Spacing	Frame Size	Modules	Power	Solar Access
Subarray #1	Portrait	10°	191.97°	0.4572 m	1x1	22	8.91 kWp	98.51%

Monthly solar access (%) across arrays

Array	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	91	94	98	100	100	100	100	100	100	96	93	91

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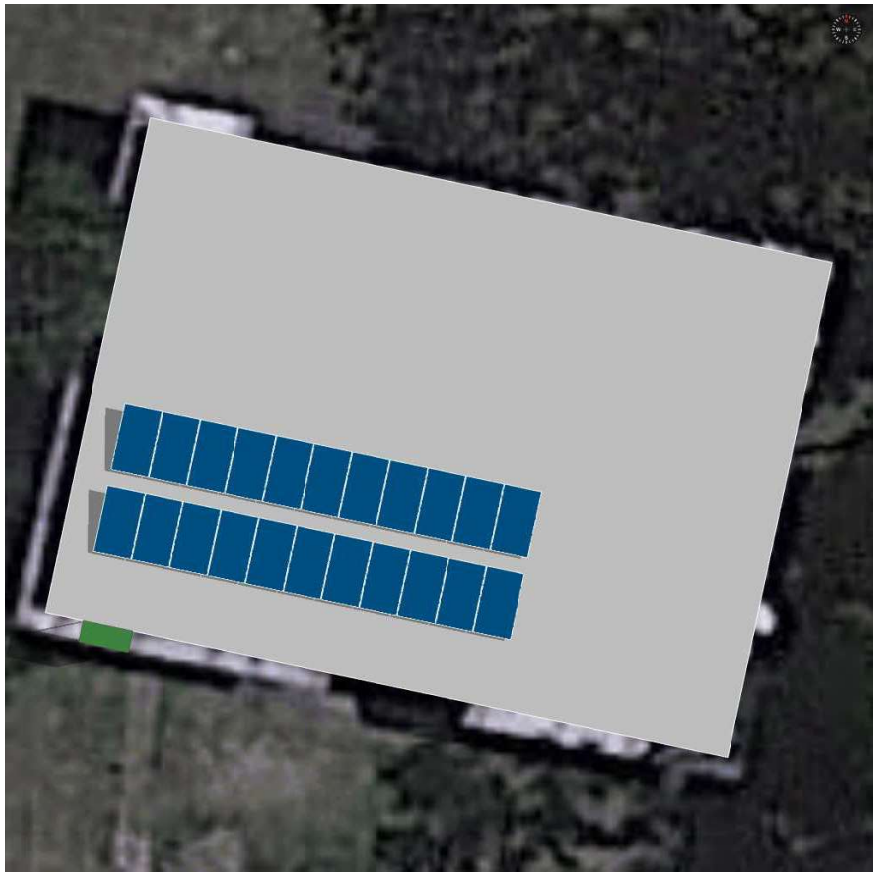
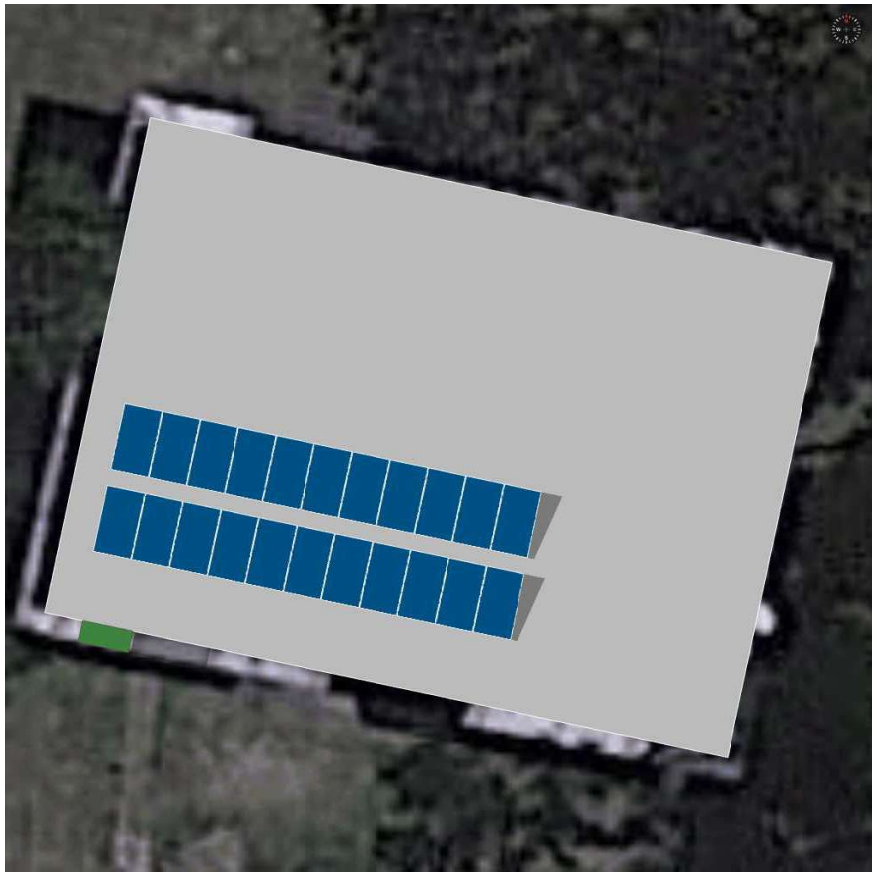
Shading Analysis

June 21 | 9:00:00 AM



June 21 | 4:00:00 PM



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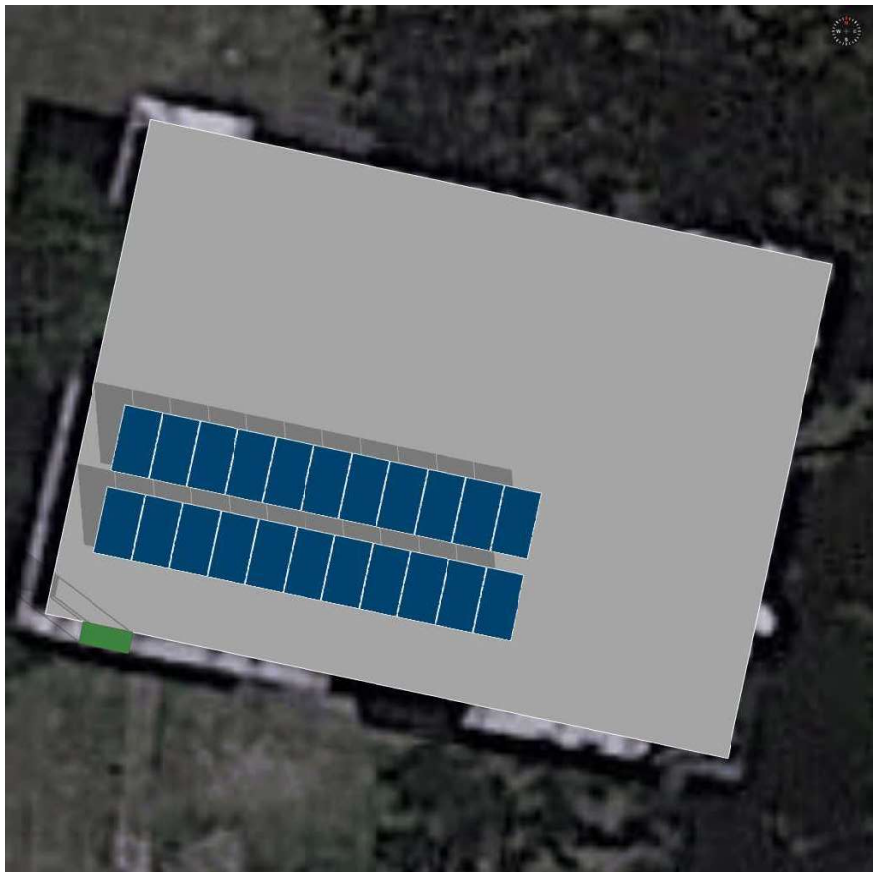
Shading Analysis

December 21 | 9:00:00 AM



December 21 | 4:00:00 PM

Summary: Modules are shadow free for **99.45%** of solar time throughout the year.

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Irradiance Map

Solar Access

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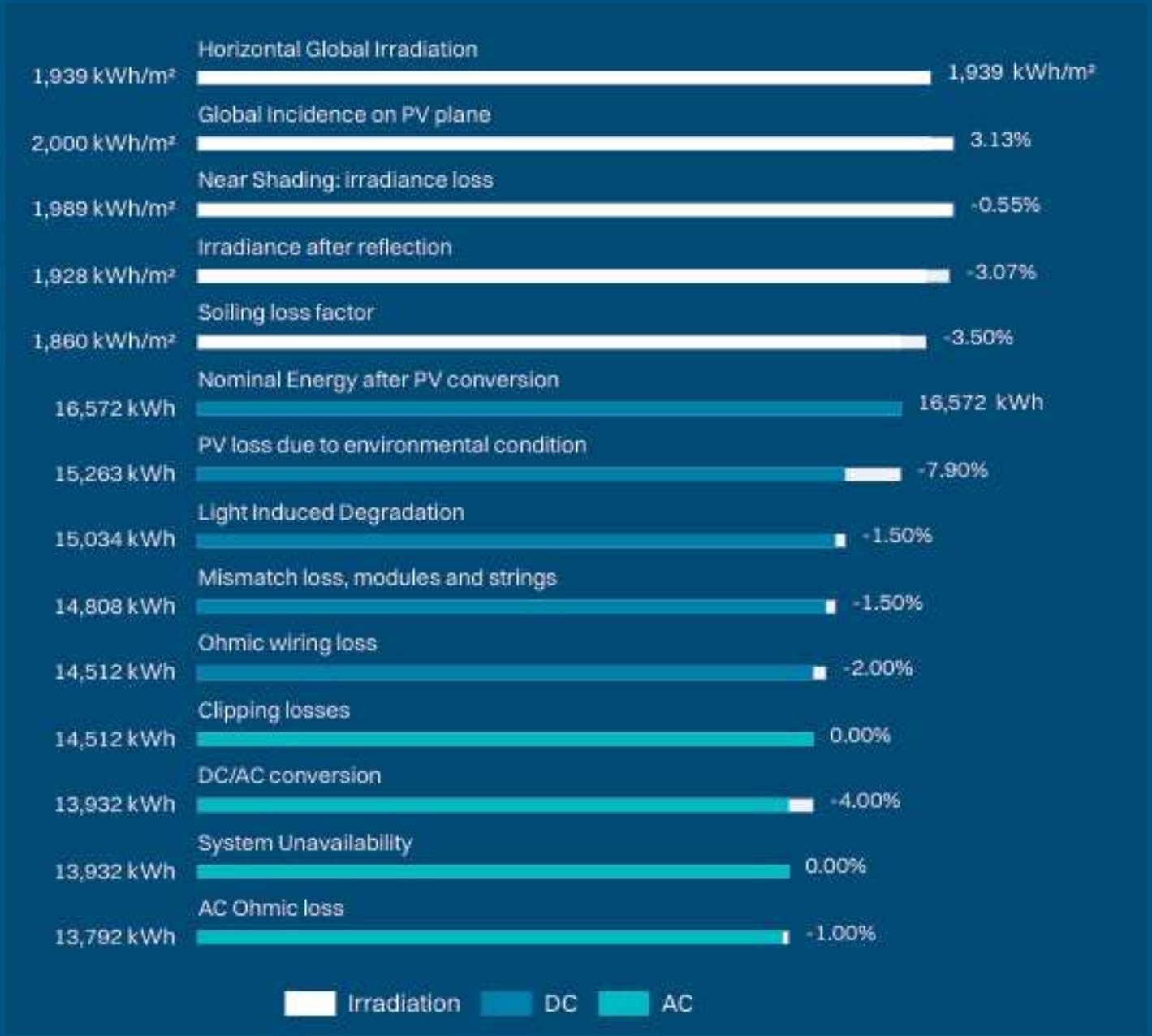
System Production Losses

Loss in generation predicted due to environmental and electrical factors



Environmental Impact

You are contributing to solve Earth's biggest problem - Climate Change.

CARBON DIOXIDE OFFSET	EQUIVALENT ACRES OF FOREST	COAL BURN AVOIDED
204.55	240.14	101.44
metric tons	acres/year	metric tons

Equivalent Number of Trees Planted

3,385.00 trees

Petrol Consumption Avoided

87,243.62 litres

Equivalent Kilometers Driven

804,312.66 kms

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Thank you

Ion Leed Solar Energy, LLC

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