



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-00070

Project Name: Lineas Verdes Hidro Inc Rolando Caudales Ruiz

State/Local Identifier: Puerto Rico, Ciales

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 solar panels, batteries, inverters, and electric wiring, is located on a 1.04-acre parcel (Cadastral Number 108-000-003-12-001) at Carretera 633 KM 1.4

Sector La Grama Barrio Hato Viejo, Puerto Rico, 00638 (see **Appendix A, Figure 1**- Site Location and **Figure 2**- Site Vicinity). This property is in a rural area in the northeast portion of Ciales Municipio. Access to the project areas is provided via an existing paved road that runs east/west along the southern portion of the property.

The applicant has identified one location for project activities related for 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:

- The Photovoltaic System (18.360863, -66.465247) is in the southwest 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/commercial agricultural property (see Appendix C: Site Inspection). The area assessed for this environmental review is based on the overall footprint defined by the installation plans and is approximately 0.04 acre in area.

38 solar panels (see appendix D: project quote) will be anchored to the roof of an existing building situated in the southwestern area of the property. The concrete foundation within a separate existing storage structure, located approximately 40 feet (ft) northeast of the building the PVS will be installed on, will support the installation of approximately 3 batteries and 38 inverters. The electrical lines will be located above-ground, leading to the batteries and inverters within the separate structure to the northeast. Additionally, above-ground electrical lines will lead to an existing electric meter located on the same roof the panels will be constructed atop. No ground disturbance will occur as a result of project activities. 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: \$81,475.00

Estimated Total Project Cost (HUD and non-HUD funds) [24 CFR 58.32(d)]: \$81,475.00

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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	<p>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, Fernando Luis Ribas Dominicci, is located 129,068 ft (24 miles (mi)) from the project site. The nearest military airport, Luis Munoz Marin International Airport, is located 158,249 ft (30 mi) from the project site. No further evaluation is required. The project is in compliance with airport hazards requirements.</p> <p>Airport Hazards Map is (Figure B 1-1) provided in Appendix B, Attachment 1.</p>
Coastal Barrier Resources Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<p>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 Ciales Municipio. The closest CBRS unit, Tortuguero (PR-83), is located 34,168 ft (6 mi) from the project site. No further evaluation is required. The project is in compliance with the Coastal Barrier Resources Act.</p> <p>Coastal Barrier Resources Map (Figure B 2-1) is provided in Appendix B, Attachment 2.</p>
Flood Insurance	Yes <input type="checkbox"/> No <input type="checkbox"/>	A review of the FEMA Flood Insurance Rate Map (FIRM), Community Panel 72000C0655J

Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]	<input type="checkbox"/> <input checked="" type="checkbox"/>	(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 .
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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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	The project site is in Ciales 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 72,897 ft (14 mi) from the nearest non-attainment area. Project activities include new installation of 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	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	The project site is not located within the Puerto Rico Coastal Management Zone. The closest

Coastal Zone Management Act, sections 307(c) & (d)		<p>coastal zone area is located 30,823 ft (6 mi) from the project site. No further evaluation is required. The project is in compliance with the Coastal Zone Management Act.</p> <p>Coastal Zone Map (Figure B 5-1) is provided in Appendix B, Attachment 5.</p>
<p>Contamination and Toxic Substances</p> <p>24 CFR Part 50.3(i) & 58.5(i)(2)</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>The project site was evaluated for potential contamination by conducting a field site inspection (Appendix C) on May 29, 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.</p> <p>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.</p> <p>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</p>

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. 1975 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-

	<p>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 "di minimis" but not EPA's minor repair and maintenance threshold.</p> <p>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 on walls 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.</p> <p>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 rural area of Ciales Municipio and will continue to be used for agricultural purpose.</p> <p>The desktop review did not find any of the above-listed toxic, hazardous or radioactive substances in or within 3,000 feet of the project area. The project is in compliance with contamination and toxic substances requirements.</p>
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		Radon Agency Correspondence and memorandum and Contamination and Toxic Substances Map (Figure B 6-1) are provided in Appendix B, Attachment 6 . Required mitigation measures are listed in the section below.
Endangered Species Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<p>The project activities are not expected to affect protected species or critical habitats.</p> <p>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.</p> <p>The review identified one federally listed species (Puerto Rican boa [<i>Chilabothrus inornatus</i>]) with the potential to occur within the project area. There is no designated or proposed critical habitat within the project area; the closest final designated critical habitat is located 26,960 ft (5 mi) west.</p> <p>The project activities, 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.</p> <p>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.</p> <p>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.</p>

		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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	The project includes the improvement to an existing structure through the installation of 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	This project does not include any activities that would convert agricultural land to non-agricultural use. Per the USGS/NRCS Web Soil Survey, the project area crosses two mapped soil series: MoD2 (Moca clay, 12 to 20 percent slopes, eroded) and SoD (Soller clay, 12 to 20 percent slopes). Prime farmlands are within the project area. Although the project includes new improvements to 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 (Figure B 8-1) and Soils Map is provided in Appendix B, Attachment 8 .
Floodplain Management Executive Order 11988, particularly section 2(a); 24 CFR Part 55	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	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 located in the municipality of Ciales; therefore, PFIRM information was not available for the area and therefore not considered in the review.

		ABFE and Preliminary Floodplain Map (Figure B-1 and B-2) is provided in Appendix B, Attachment 9 .
Historic Preservation National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<p>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.</p> <p>Tyra Brunz (SOI-Qualified Architectural Historian) conducted historical archaeological and architectural evaluations for the property.</p> <p>The evaluation concluded that project actions will not affect the historic properties that compose the Area of Potential Effect (APE).</p> <ul style="list-style-type: none"> • 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. • No historic/eligible properties or archaeological sites within the APE or visual APE will be directly affected by the proposed projects. <p>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..</p> <p>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 findings of no historic properties affected for this undertaking."</p> <p>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.</p>

		SHPO consultation, including a Previously Recorded Cultural Resources Map (Figure B 10-1), are provided in Appendix B, Attachment 10 .
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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	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 regulation.
Sole Source Aquifers Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	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, 5,345,999 ft (1,012 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	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. Wetland 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	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 235,270 ft (45 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 29, 2025, 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 resource, 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. 1975 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: 10/07/2025

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

Responsible Entity Agency Official Signature:

Date: _____

Name/Title: I. Lorenzo, Permits and Environmental Compliance Specialist

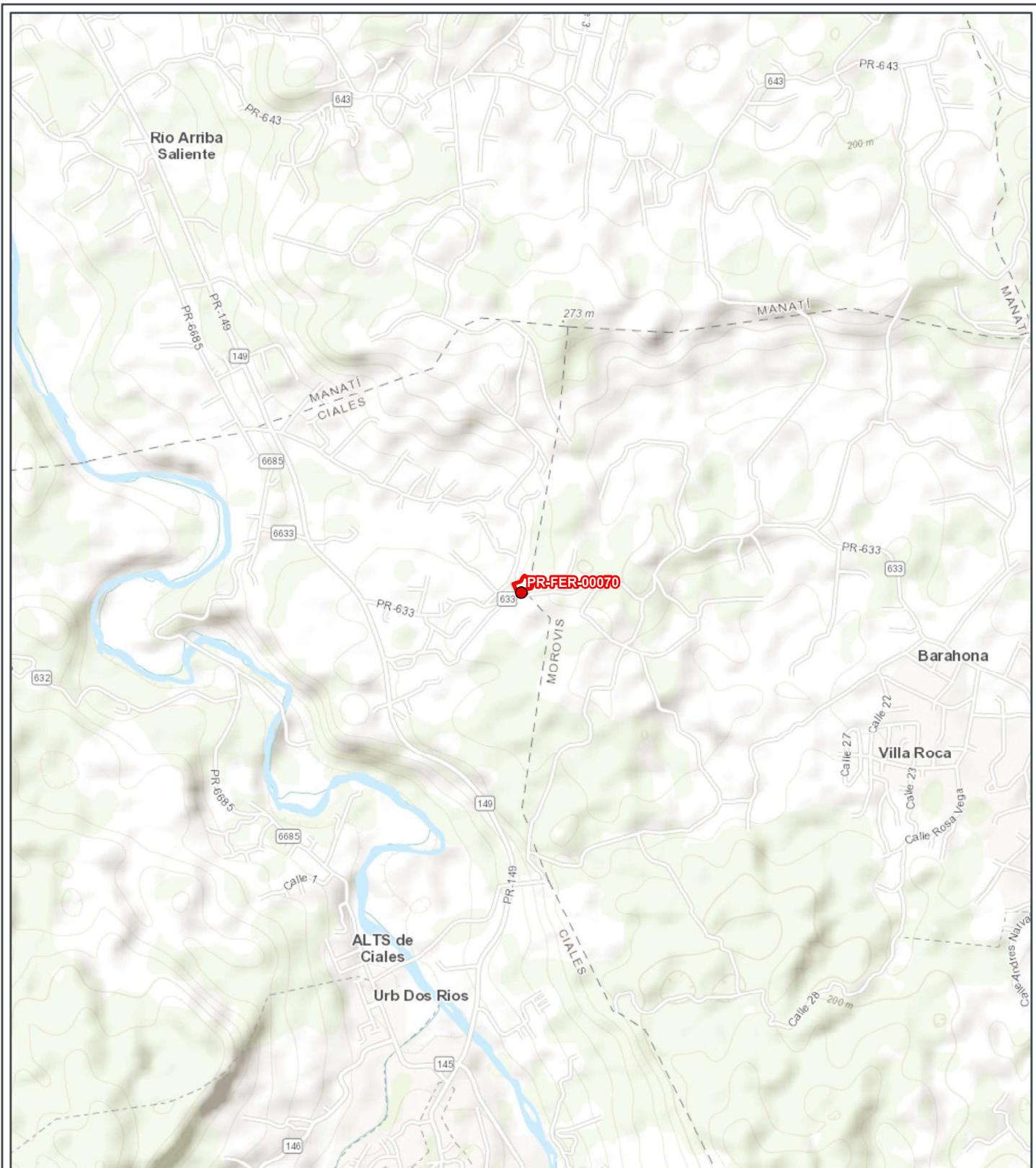
This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).

Appendix A

Project Overview Figures

Figure 1

Site Location Map



FER PROGRAM

**Figure A-1:
Site Location**

Applicant ID: PR-FER-00070

● Site

■ Site Parcel

Carretera 633 km 1.4 Sector La
Grama Barrio Hato Viejo
Ciales, PR 00638

Parcel ID: 108-000-003-12-001
18.360863, -66.465247

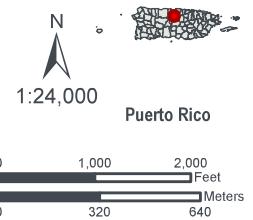


Figure 2
Site Vicinity Map



FER PROGRAM

**Figure A-2:
Site Vicinity**

Applicant ID: PR-FER-00070

- Site Parcel
- Roof Mounted Photovoltaic System
- Wall mounted Battery/Inverter
- Proposed Above-Ground Electrical Line Route

Carretera 633 km 1.4 Sector La
Grama Barrio Hato Viejo
Ciales, PR 00638

Parcel ID: 108-000-003-12-001
18.360863, -66.465247

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

Layout: Site Vicinity
Apx: 78764_feTier2Maps

N
1:900



Puerto Rico

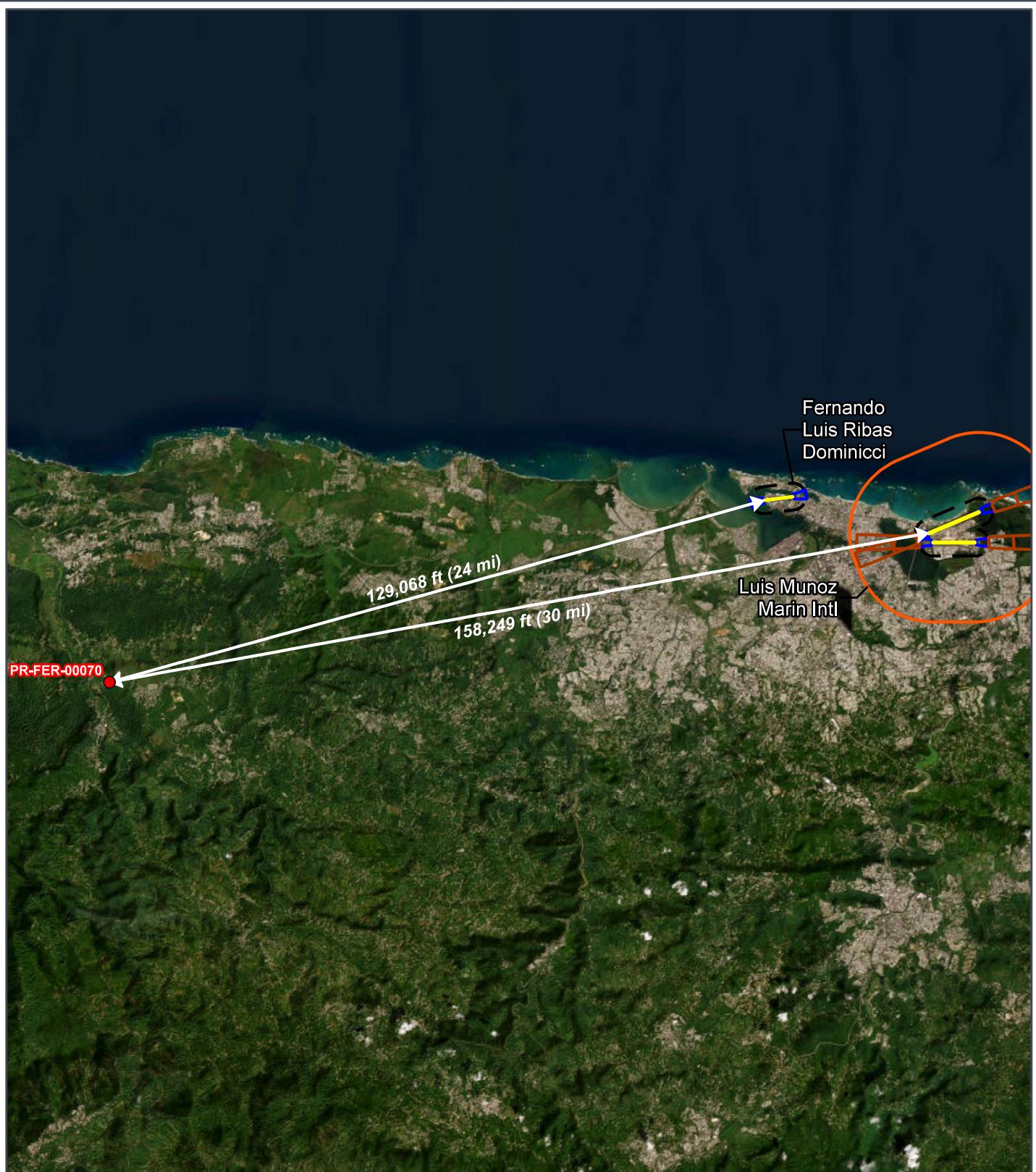


Appendix B

Attachments and Supporting Documentation

Attachment 1

Airport Hazards Map



FER PROGRAM

Figure B 1-1:
Airport Hazards Map

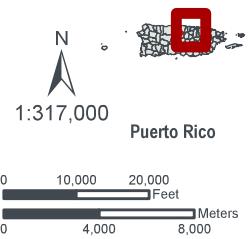
Applicant ID: PR-FER-00070

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

Carretera 633 km 1.4 Sector La
Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
18.360863, -66.465247

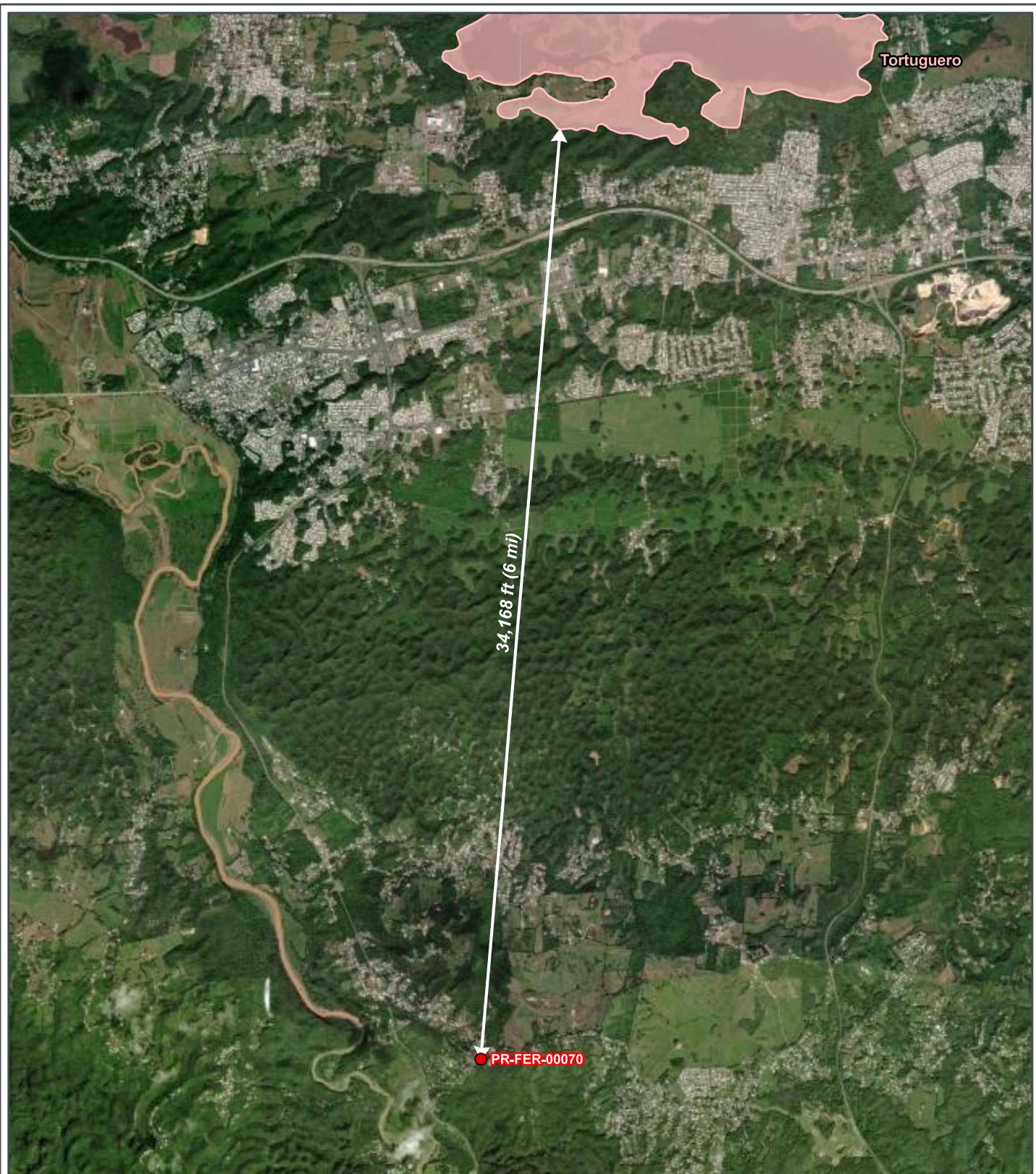
Data Source: <https://geodata.bts.gov/>
Base Map: ESRI ArcGIS Online,
accessed June 2025

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



Attachment 2

Coastal Barrier Resources Map



FER PROGRAM

Figure B 2-1: Coastal Barrier Resources Map

Applicant ID: PR-FER-00070

● Site

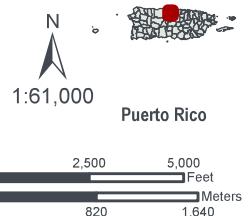
■ Site Parcel

■ Otherwise Protected Area

■ System Unit

Carretera 633 km 1.4 Sector La
Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
18.360863, -66.465247

Data Source: <https://cbrgis.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



Attachment 3

Flood Insurance Rate Map



FER PROGRAM

Figure B 3-1: Flood Insurance Rate Map (FIRM)
Applicant ID: PR-FER-00070

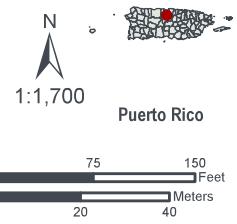
SWCA
ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Wall mounted Battery/Inverter
- Proposed Above-Ground Electrical Line Route
- ~ 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

Carretera 633 km 1.4 Sector La
Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
18.360863, -66.465247

Data Source: <https://hazards.fema.gov/gis/nfhlrest/services/public/NFHL/MapServer>
Base Map: USA NAIP Imagery
Imagery Year: 2022
Updated: 6/6/2025
Layout: Effective Floodplain
Aprix: 78764_ferTier2Maps



Attachment 4

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



You are here: EPA Home > Green Book > National Area and County-Level Multi-Pollutant Information > Puerto Rico Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

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 $\mu\text{g}/\text{m}^3$) 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

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	1112131415161718192021222324	//		Part	32,185	72/013
Bayamon Municipio	Sulfur Dioxide (2010)	San Juan, PR	18192021222324	//		Part	22,921	72/021
Catano Municipio	Sulfur Dioxide (2010)	San Juan, PR	18192021222324	//		Whole	28,140	72/033
Guaynabo Municipio	PM-10 (1987)	Mun. of Guaynabo, PR	929394959697989900010203040506070809	02/11/2010	Moderate	Part	90,470	72/061
Guaynabo Municipio	Sulfur Dioxide (2010)	San Juan, PR	18192021222324	//		Part	23,802	72/061
Salinas Municipio	Sulfur Dioxide (2010)	Guayama-Salinas, PR	18192021222324	//		Part	23,401	72/123
San Juan Municipio	Sulfur Dioxide (2010)	San Juan, PR	18192021222324	//		Part	147,963	72/127
Toa Baja Municipio	Sulfur Dioxide (2010)	San Juan, PR	18192021222324	//		Part	52,441	72/137

Important Notes

Discover.

Connect.

Ask.

Follow.

2024-01-31



FER PROGRAM

Figure B 4-1:
Clean Air Map

Applicant ID: PR-FER-00070

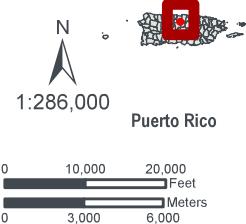
SWCA
ENVIRONMENTAL CONSULTANTS

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

*No Data in Puerto Rico

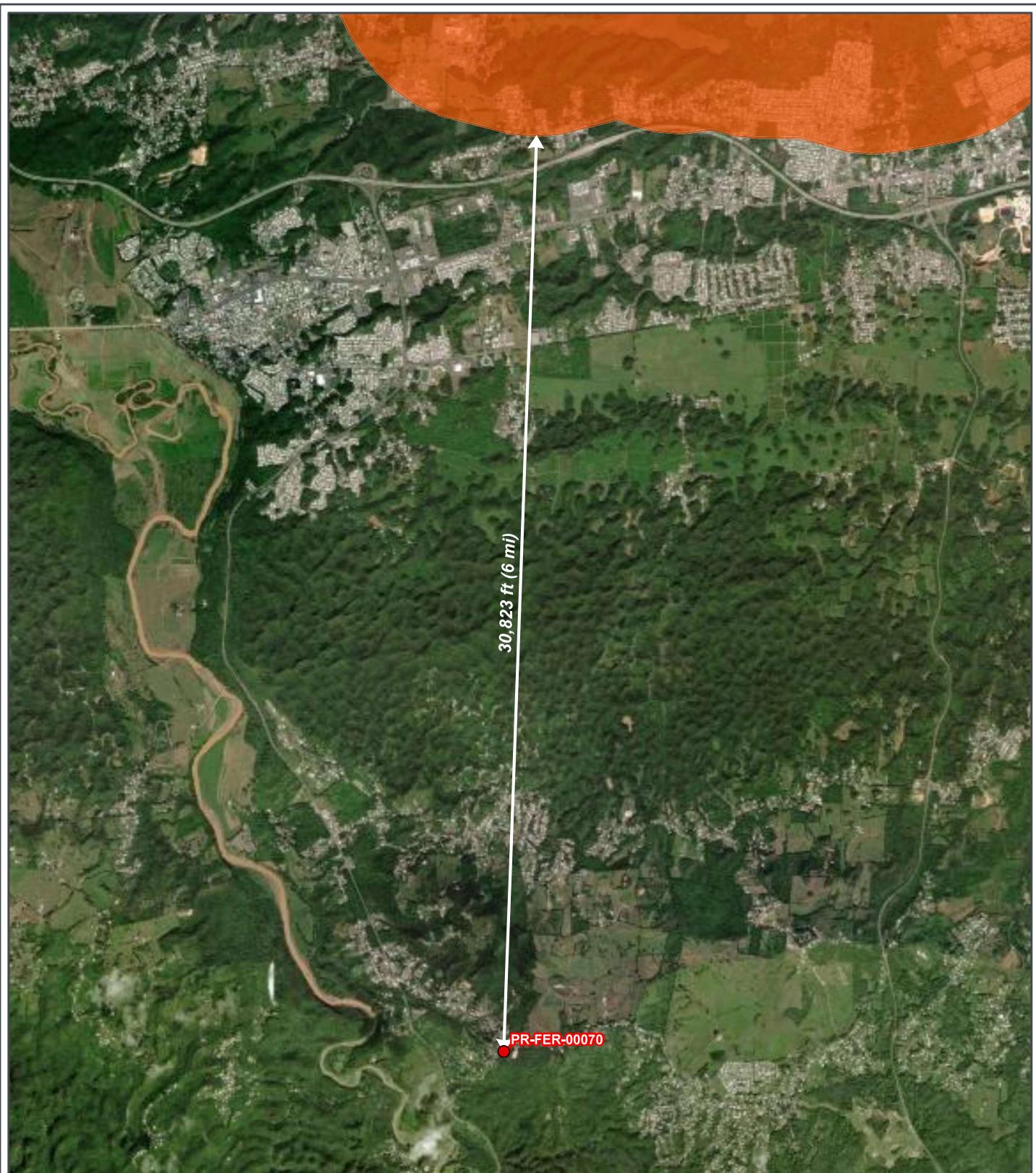
Carretera 633 km 1.4 Sector La
Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
18.360863, -66.465247

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



Attachment 5

Coastal Zone Map



FER PROGRAM

Figure B 5-1: Coastal Zone Management Map

Applicant ID: PR-FER-00070

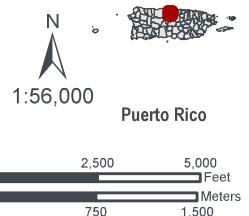
SWCA
ENVIRONMENTAL CONSULTANTS

- Site
- Roof Mounted Photovoltaic System
- Wall mounted Battery/Inverter
- Proposed Above-Ground Electrical Line Route
- Coastal Management Zone

Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
18.360863, -66.465247

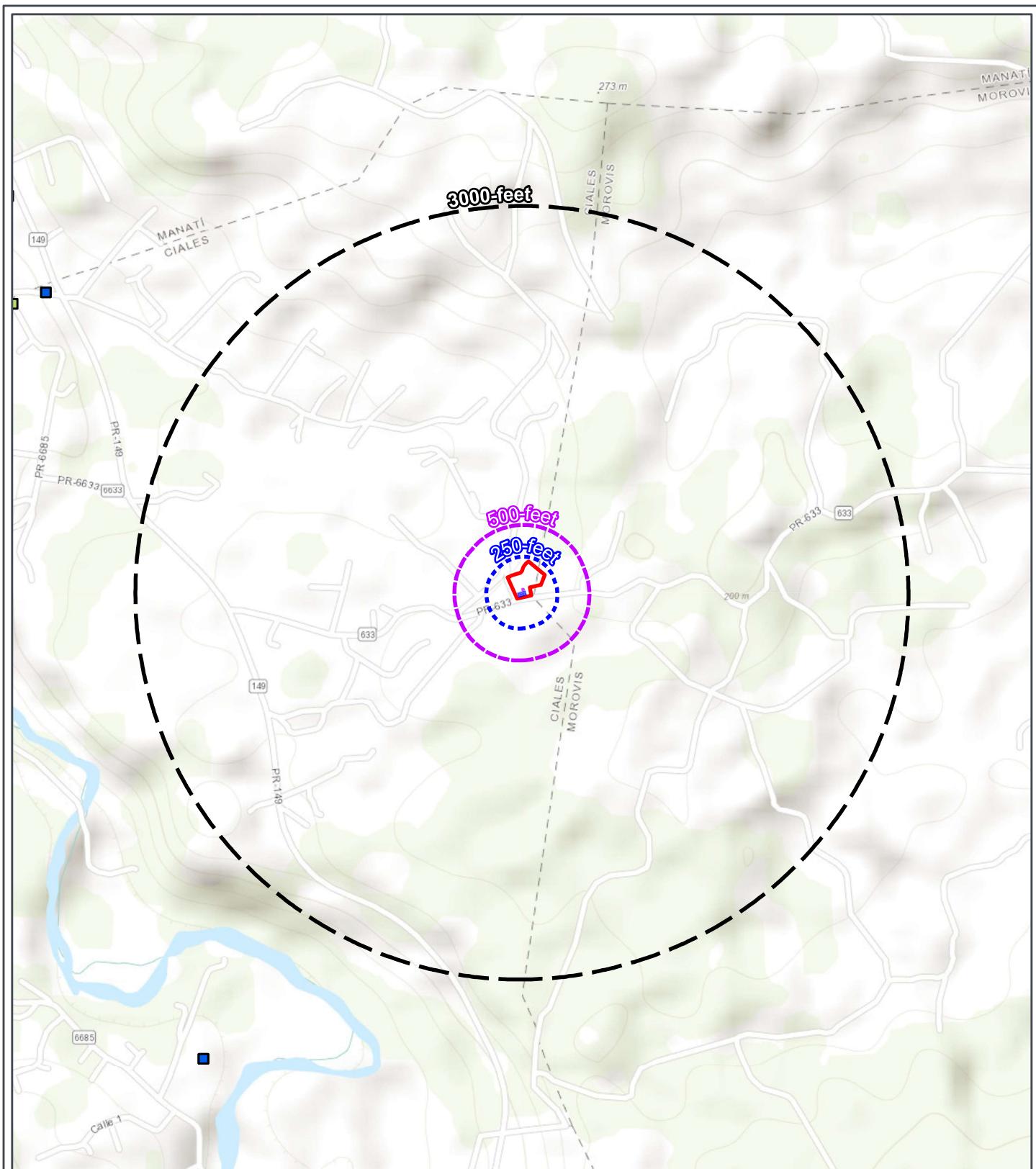
Data Source: <https://coast.noaa.gov/arcgis/rest/services/Hosted/CoastalZoneManagementAct/BaseMap>
Map: ESRI ArcGIS Online, accessed June 2025
Updated: 6/6/2025

Layout: Coastal Zone Management
Apxr: 78764_ferTier2Maps
0 2,500 5,000 Feet
0 750 1,500 Meters



Attachment 6

**Contamination and Toxic
Substances Map, Radon
Memorandum and
Correspondence**



FER PROGRAM

Figure B 6-1:
Contamination and
Toxic Substances Map

Applicant ID: PR-FER-00070

SWCA
ENVIRONMENTAL CONSULTANTS

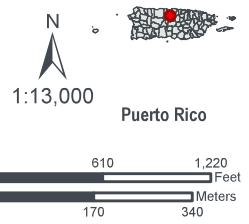
■ Site Parcel	■ Buffer (3000-feet)
■ Roof Mounted Photovoltaic System	■ Air pollution
■ Wall mounted Battery/ Inverter	■ Brownfields
■ Proposed Above-Ground Electrical Line Route	■ Hazardous waste
■ Buffer (250-feet)	■ Superfund
■ Buffer (500-feet)	■ Toxic releases

Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
18.360863, -66.465247

Data Source: <https://geopub.epa.gov/arcgisrest/services/EMEF/elpoints/MapServer>

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

Layout: Contamination and Toxic Substances





Memorandum to File

Date: September 12, 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-00070

Project: Lineas Verdes Hidro Inc Rolando Caudales Ruiz

Re: Justification for the Infeasibility and Impracticability of Radon Testing

After reviewing Application Number PR-FER-00070 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



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.

Barbosa Ave. #606, Building Juan C. Cordero Dávila, Rio Piedras, PR 00988 | PO Box 21365 San Juan, PR 00928-1365
Tel (787) 274-2527 | silvana.cancelos@upr.edu



August 20, 2024

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

Via email: silvana.cancelos@upr.edu

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

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Barbosa Ave. #606, Building Juan C. Cordero Dávila, Rio Piedras, PR 00988 | PO Box 21365 San Juan, PR 00928-1365
Tel (787) 274-2527 | carlos.marin3@upr.edu

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

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. Rodriguez Rodriguez, Esq.
Secretary

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

CDBG-DR/MIT Program
Request for Information in relation with HUD CDP-23-103 for Puerto Rico
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Sincerely,

William O. Rodriguez Rodriguez, Esq.
Secretary

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



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

Via email: OIA@cdc.gov

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

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

CDBG-DR/MIT Program
Request for Information in relation with HUD CDP-23-103 for Puerto Rico
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Sincerely,

William O. Rodriguez Rodriguez, Esq.
Secretary



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

Via email: anais.rodriguez@dma.pr.gov

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

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Request for Information in relation with HUD CDP-23-103 for Puerto Rico
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Sincerely,

Luis Márquez, secretariaje@dma.pr.gov
Secretary

Cc:
Mr. Luis Márquez, secretariaje@dma.pr.gov
Eng. Amarilys Rosario, alro@dma.pr.gov
Mrs. Elié Ortega, eortega@dma.pr.gov



August 20, 2024

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

Via email: dr.carlos.mellado@salud.pr.gov

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

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Tel (787) 274-2527 | www.salud.pr.gov

CDBG-DR/MIT Program
Request for Information in relation with HUD CDP-23-103 for Puerto Rico
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Sincerely,

William O. Rodriguez Rodriguez, Esq.
Secretary

Cc: Mr. Raúl Hernández Díaz, r.hernandez2@salud.pr.gov



August 20, 2024

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

Via email: hweyers@usgs.gov

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

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CDBG-DR/MIT Program
Request for Information in relation with HUD CDP-23-103 for Puerto Rico
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Thank you in advance for your cooperation and support. We look forward to working together on this critical initiative.

Sincerely,

William R. Randall Schumann, Esq.
Secretary

Cc: Mr. R. Randall Schumann, r.schumann@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); Iriaray, 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 to 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 <rfernandez2@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
rfernandez2@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 <cesarrodiguez@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 - Mayaguez



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 F-Pem 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.

September 23, 2024

VIA EMAIL

William O. Rodriguez Rodriguez, 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 Rodriguez Rodriguez:

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

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

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>.

2

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**
Carmen R. Guerrero Pérez
Director

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

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: cesarrodiguez@drna.pr.gov
Marita Rosa Olivares: maritarosaolivares@drna.pr.gov

Attachment 7

Threatened and Endangered

Species Consultation, USFWS IPaC

Species List and Critical Habitat

Map



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: Adam Doering, Project Biologist on behalf of the Puerto Rico Department of Housing

Date: June 24, 2025

Re: **Threatened and Endangered Species Evaluation for the Puerto Rico Department of Housing FER PR-FER-00070 Project/ SWCA Project No. 78764**

Project Description

Application PR-FER-00070 is proposing the installation of a photovoltaic system (PVS), which includes solar panels, batteries, inverters, and electric wiring on a commercial agricultural property. 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 0.04 acre in area.

Approximately 38 solar panels will be anchored to the roof of an existing building situated in the southwestern area of the property. The concrete foundation within a separate existing storage structure, located approximately 40 feet (ft) northeast of the building the PVS will be installed on, will support the installation of approximately 3 batteries and 38 inverters. The electrical lines will be located above-ground, leading to the batteries and inverters within the separate structure to the northeast. Additionally, above-ground electrical lines will lead to an existing electric meter located on the same roof the panels will be constructed atop.

No ground disturbance will occur as a result of project activities. No tree clearing or pruning will occur as a result of project activities (project). The project is located at Carretera 633 KM 1.4 Sector La Grama Barrio Hato Viejo, Ciales, PR, 00638 (18.360863, -66.465247) in a rural area.

Existing Conditions

A site inspection on May 29, 2025, found the project area is located on existing buildings surrounded by paved surfaces and agricultural greenhouses within a rural area that does not require clearing of forested areas. There is no wetland near the project area. 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 (2023a) 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. 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 (<i>Chilabothrus inornatus</i>)	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).	<i>Unlikely to occur.</i> The proposed project area consists of existing buildings.	<i>No effect.</i> 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. 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. 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. Therefore, the proposed activity will have *no effect* on federally listed species or designated 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
Adam.Doering@swca.com.

Sincerely,


Adam Doering
Biologist
SWCA Environmental Consultants

LITERATURE CITED

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

_____. 2023a. Information for Planning and Consultation System (IPaC). Available at: <http://ecos.fws.gov/ipac/>. Accessed June 2025.

_____. 2023b. Critical Habitat for Threatened & Endangered Species [USFWS]. Available at: <https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77>. Accessed June 2025.

APPENDIX A

Maps

Figure 1
USGS Topographic Map



FER PROGRAM

USGS Topographic Map
Applicant ID: PR-FER-00070

Site

Site Parcel

Carretera 633 km 1.4 Sector La
Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
66.465247°W 18.360863°N

N
1:20,000
Puerto Rico
Base Map: ESRI ArcGIS Online,
accessed June 2025
Updated: 6/6/2025
Layout: USGS Topographic Map
Apxr: 78764_ferTier2Maps
0 940 1,880
0 260 520
Feet
Meters

Figure 2
Site Vicinity Map



FER PROGRAM

Site Vicinity

Applicant ID: PR-FER-00070

 Site Parcel

 Roof Mounted Photovoltaic System

 Wall mounted Battery/Inverter

 Proposed Above-Ground Electrical Line Route

Carretera 633 km 1.4 Sector La
Grama Barrio Hato Viejo
Ciales, PR 00638

Parcel ID: 108-000-003-12-001
66.465247°W 18.360863°N

Base Map: USA NAIP Imagery

Imagery Year: 2022

Updated: 6/6/2025

Layout: Site Vicinity

Apx: 78764_ferTier2Maps

N
1:900



Puerto Rico

Figure 3
Wetlands Map



FER PROGRAM

Wetlands Protection Map

Applicant ID: PR-FER-00070

SWCA
ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Wall mounted Battery/Inverter
- Proposed Above-Ground Electrical Line Route
- NHD Stream
- NHD Waterbody

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
66.465247°W 18.360863°N

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

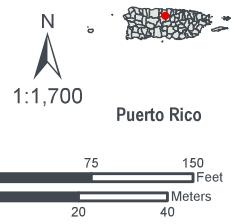


Figure 4

Critical Habitat Map



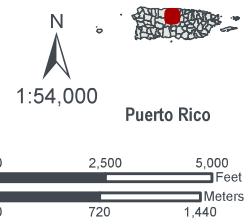
FER PROGRAM

Critical Habitat Map

Applicant ID: PR-FER-00070

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

Carretera 633 km 1.4 Sector La
Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
66.465247°W 18.360863°N



APPENDIX B

Photographic Log

Project #: PR-FER-00070	Photographer: Eileen Ortiz
Location Address: Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo, Ciales, PR 00638	Coordinates: 18.360863, -66.465247

Photo #: 01	Date: May 29, 2025		
Photo Direction: North			
Description: This picture overviews the front of the building. Additionally, the solar panels will be installed on the roof of the building.			

29 may 2025 2:08:15 p. m.
18.3607814N 66.46513974W
340° N
Puerto Rico 633
Hato Viejo
Ciales

Photo #: 02	Date: May 29, 2025		
Photo Direction: Northeast			
Description: This picture overviews the front of the building from a left angle.			

29 may 2025 2:04:27 p. m.
18.36068928N 66.46532022W
33° NE
Hato Viejo
Ciales

Project #: PR-FER-00070	Photographer: Eileen Ortiz
Location Address: Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo, Ciales, PR 00638	Coordinates: 18.360863, -66.465247

Photo #: 03	Date: May 29, 2025		
Photo Direction: Northeast			
Description: This picture overviews the plants nursery area.			

29 may 2025 2:10:13 p. m.
18.36092225N 66.46532991W
51° NE
Hato Viejo
Ciales

Photo #: 04	Date: May 29, 2025		
Photo Direction: Northwest			
Description: This picture shows the production area.			

29 may 2025 2:16:23 p. m.
18.36104198N 66.46511137W
294° NW
Puerto Rico 633
Hato Viejo
Ciales

Project #: PR-FER-00070	Photographer: Eileen Ortiz
Location Address: Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo, Ciales, PR 00638	Coordinates: 18.360863, -66.465247

<p>Photo #: 05</p> <p>Date: May 29, 2025</p> <p>Photo Direction: Southeast</p> <p>Description: This picture overviews the exterior of the structure where the batteries will be installed.</p>	 <div style="position: absolute; top: 171px; left: 0px; width: 100%; height: 100%; background-color: black; opacity: 0.5; display: flex; align-items: center; justify-content: center;"> 29 may 2025 2:18:11 p. m. 18.36096888N 66.46523027W 120° SE Puerto Rico 633 Hato Viejo Ciales </div>
--	---

<p>Photo #: 06</p> <p>Date: May 29, 2025</p> <p>Photo Direction: Southeast</p> <p>Description: This picture overviews inside the structure where the batteries will be installed.</p>	 <div style="position: absolute; top: 548px; left: 0px; width: 100%; height: 100%; background-color: black; opacity: 0.5; display: flex; align-items: center; justify-content: center;"> 29 may 2025 2:18:37 p. m. 18.36097509N 66.46520336W 142° SE Puerto Rico 633 Hato Viejo Ciales </div>
---	--

Project #: PR-FER-00070	Photographer: Eileen Ortiz
Location Address: Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo, Ciales, PR 00638	Coordinates: 18.360863, -66.465247

Photo #: 07	Date: May 29, 2025	 29 may 2025 2:09:53 p. m. 18.36082853N 66.46528493W 339° N Hato Viejo Ciales
Photo Direction: North	Description: This picture overviews the existing electric meter located at the front of the building.	

Photo #: 08	Date: May 29, 2025	 29 may 2025 2:13:22 p. m. 18.36125793N 66.46517772W 190° S Puerto Rico 633 Hato Viejo Ciales
Photo Direction: South	Description: This picture overviews a 30,000-gallon underground water tank. It is located beneath the concrete floor where the shade houses are established.	

Project #: PR-FER-00070	Photographer: Eileen Ortiz
Location Address: Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo, Ciales, PR 00638	Coordinates: 18.360863, -66.465247

Photo #: 09	Date: May 29, 2025	
Photo Direction: South		
Description: This picture overviews one connected 800-gallon water tank located on the left side of the building.		

Photo #: 10	Date: May 29, 2025	
Photo Direction: Southeast		
Description: This picture overviews one connected 500-gallon water tank located on the left side beneath the building.		

Project #: PR-FER-00070	Photographer: Eileen Ortiz
Location Address: Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo, Ciales, PR 00638	Coordinates: 18.360863, -66.465247

Photo #: 11	Date: May 29, 2025	
Photo Direction: West		
Description: This picture overviews one 55-gallon drum located at the front of the building.		

Photo #: 12	Date: May 29, 2025	
Photo Direction: North		
Description: This picture provides an overview of the approximate direction of the wetland area, which, according to the National Wetlands Inventory (NWI), is located approximately 1,041 feet from the project footprint, but there will be no impact on the wetlands.		

APPENDIX C

USFWS Information for Planning and Consultation and Technical Assistance Letter



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:

06/23/2025 15:07:23 UTC

Project Code: 2025-0112515

Project Name: PR-FER-00070

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

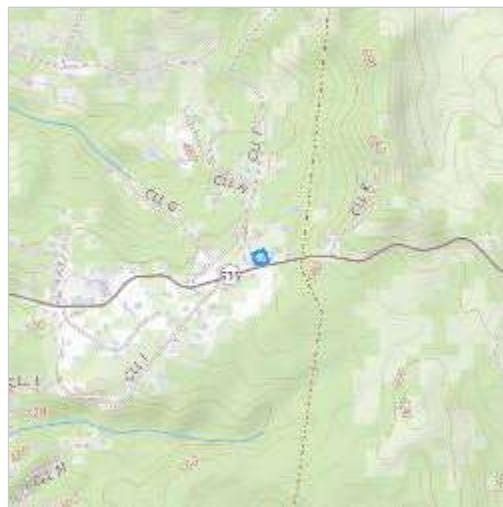
(939) 320-3135

PROJECT SUMMARY

Project Code: 2025-0112515
Project Name: PR-FER-00070
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 commercial agricultural property. The area assessed for this environmental review is based on the overall footprint defined by the installation plans and is approximately 0.04 acre in area. Approximately 38 solar panels will be anchored to the roof of an existing building situated in the southwestern area of the property. The concrete foundation within a separate existing storage structure, located approximately 40 feet (ft) northeast of the building the PVS will be installed on, will support the installation of approximately 3 batteries and 38 invertors. The electrical lines will be located above-ground, leading to the batteries and inverters within the separate structure to the northeast. Additionally, above-ground electrical lines will lead to an existing electric meter located on the same roof the panels will be constructed atop. No ground disturbance will occur as a result of project activities. 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/@18.36089775,-66.46525389961914,14z>



Counties: Ciales 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 Fisheries¹, 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.

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 <i>Chilabothrus inornatus</i> 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/GCGCQDLEBJGJPF764YSFOEFS7I/documents/generated/7159.pdf	Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

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: Adam Doering
Address: 567 Bishop Gate Ln
City: Jacksonville
State: FL
Zip: 32204
Email: adam.doering@swca.com
Phone: 9043051095

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Department of Housing and Urban Development



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:

06/23/2025 15:18:44 UTC

Project code: 2025-0112515

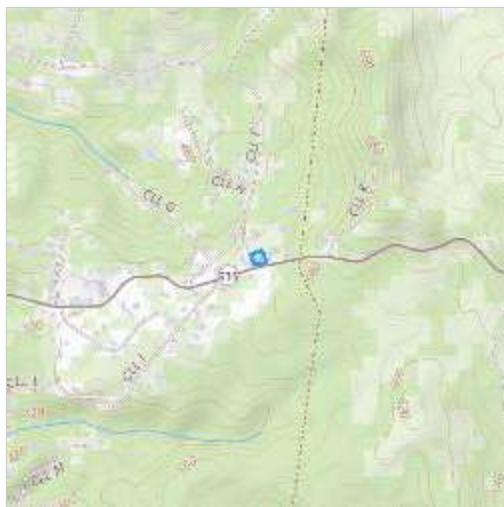
Project Name: PR-FER-00070

Subject: Technical Assistance letter for the project named 'PR-FER-00070' for specified threatened and endangered species, that may occur in your proposed project location, pursuant to the IPaC determination key titled Caribbean Determination Key (DKey).

Dear Applicant:

Thank you for using the assisted evaluation keys in IPaC. This letter is provided pursuant to the Service's authority under the Endangered Species Act of 1973, as amended (ESA) (87 Stat. 884; 16 U.S.C. 1531et seq.). On June 23, 2025, Adam Doering used the Caribbean DKey; dated January 03, 2025, in the U.S. Fish and Wildlife Service's online [IPaC application](#) to evaluate potential impacts to federally listed species, from a project named 'PR-FER-00070'. The project is located in Ciales County, Puerto Rico (shown below).

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@18.36089775,-66.46525389961914,14z>



The following description was provided for the project 'PR-FER-00070':

The proposed project involves installing a photovoltaic system, which includes solar panels, batteries, inverters, and electric wiring on a commercial agricultural property. The area assessed for this environmental review is based on the overall footprint defined by the installation plans and is approximately 0.04 acre in area. Approximately 38 solar panels will be anchored to the roof of an existing building situated in the southwestern area of the property. The concrete foundation within a separate existing storage structure, located approximately 40 feet (ft) northeast of the building the PVS will be installed on, will support the installation of approximately 3 batteries and 38 invertors. The electrical lines will be located above-ground, leading to the batteries and inverters within the separate structure to the northeast. Additionally, above-ground electrical lines will lead to an existing electric meter located on the same roof the panels will be constructed atop. No ground disturbance will occur as a result of project activities. No tree clearing or pruning will occur as a result of project activities.

Based on your answers and the assistance of the Service's Caribbean DKey, you determined the proposed Action will have "No Effect" on the following species:

Species	Listing Status	Determination
Puerto Rican Boa (<i>Chilabothrus inornatus</i>)	Endangered	No effect

Thank you for informing the Service of your "No Effect" determination(s) for this project. No further consultation/coordination for this project is required for these species. However, be aware that reinitiation of consultation may be necessary if later modifications are made to the project so that it no longer meets the criteria or outcome described above, or if new information reveals effects of the action that could affect listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed.

This letter serves as documentation of your consideration of the federally listed species as required under section 7 of the ESA. However, effects to the other federally listed species or critical habitat as listed below from the "IPaC print-out for the project" (see below) should be considered as part of your ESA review for the project.

The Service will notify you within 30 calendar days if we determine that this proposed Action does not meet the criteria for a "No Effect" (NE) determination for Federally listed species in the Caribbean. If we do not notify you within that timeframe, you may proceed with the Action under the terms of the NE concurrence provided here. This verification period allows the Caribbean Ecological Services Field Office to apply local knowledge to evaluate the Action, as we may identify a small subset of actions having unanticipated impacts. In such instances, the Caribbean Ecological Services Field Office may request additional information to verify the effects determination reached through the DKey.

Note: Projects located within the range of the Puerto Rican boa or the Virgin Islands tree boa might encounter these species during project activities. **This letter does not provide take to handle or move these species.** If relocation of the species is needed, please contact either the Puerto Rico Department of Natural Resources (DNER) at 787-724-5700, 787-230-5550, or 787-771-1124 for projects in Puerto Rico, or the Virgin Islands Department of Planning and

Natural Resources, Division of Fish and Wildlife (DFW) at 340-775-6762 for projects in the Virgin Islands. Otherwise, contact the Caribbean Ecological Services Field Office (caribbean_es@fws.gov) to determine whether the consultation needs to be reinitiated.

If the proposed project is located within species range where a DKey has not been developed for those species, please follow the established guidance for initiating section 7 consultation Caribbean Ecological Services Field Office.

We appreciate your interest in protecting endangered species and their habitats. It is the Service's mission to work with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of our people. If you have any questions or require additional information, please contact our office at Caribbean_es@fws.gov.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

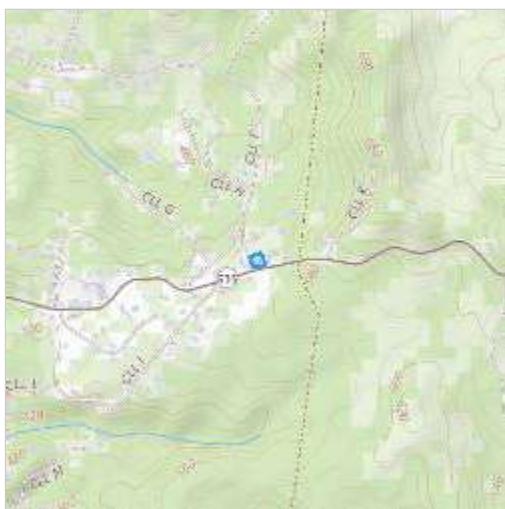
PR-FER-00070

2. Description

The following description was provided for the project 'PR-FER-00070':

The proposed project involves installing a photovoltaic system, which includes solar panels, batteries, inverters, and electric wiring on a commercial agricultural property. The area assessed for this environmental review is based on the overall footprint defined by the installation plans and is approximately 0.04 acre in area. Approximately 38 solar panels will be anchored to the roof of an existing building situated in the southwestern area of the property. The concrete foundation within a separate existing storage structure, located approximately 40 feet (ft) northeast of the building the PVS will be installed on, will support the installation of approximately 3 batteries and 38 invertors. The electrical lines will be located above-ground, leading to the batteries and inverters within the separate structure to the northeast. Additionally, above-ground electrical lines will lead to an existing electric meter located on the same roof the panels will be constructed atop. No ground disturbance will occur as a result of project activities. No tree clearing or pruning will occur as a result of project activities.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@18.36089775,-66.46525389961914,14z>



QUALIFICATION INTERVIEW

1. Is the proposed project an EPA Multi-Sector General Permit (MSGP) renewal for an existing project? ([MSGP Fact Sheet](#))

No

2. Is the proposed project within an urban developed area? (i.e., cities, downtowns, shopping malls etc.)

Note: Urban and developed areas has one or more of the following characteristics: Presence of existing buildings, residential areas, and commercial establishments. Well-established infrastructure including roads, utilities, and urban facilities. High population density. Established neighborhoods and urban amenities ("urbanizaciones"). Developed landscape with paved surfaces, parking lots, and industrial areas. Signs of human activity and urbanization, such as shopping centers and recreational facilities. Location within the boundaries of a city or town ("casco urbano"). High concentration of built-up structures and limited open spaces. Aerial imagery might be requested to the applicant. .

No

3. Does the proposed project consist of rehabilitation or demolition of existing single-family homes and buildings?

No

4. Does the proposed project consist of improvements to existing facilities?

Note: Examples of facilities are occupied single family homes, and buildings; existing recreational facilities, including the installation of roofs to existing basketball courts, etc.

Yes

5. [Hidden Semantic] Does the proposed project intersect the Puerto Rican boa area of influence?

Automatically answered

Yes

IPAC USER CONTACT INFORMATION

Agency: SWCA
Name: Adam Doering
Address: 567 Bishop Gate Ln
City: Jacksonville
State: FL
Zip: 32204
Email: adam.doering@swca.com
Phone: 9043051095

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Department of Housing and Urban Development

APPENDIX D

Quote



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:	
Power Solar LLC	Hector Ramos	
INFORMACION DEL SOLICITANTE		
Nombre del Solicitante:	Nombre del Negocio:	
Rolando Caudales Ruiz	Líneas Verdes Hidro Inc	
Dirección de la propiedad:	Municipio:	Código postal:
B-2 CAR 149 R-633 K1.3 HATO VIEJO CAMPAMENTO-LA GRAMA	Ciales	00638
Coordenadas de la propiedad (proporcione hasta seis decimales)		
Latitud 18.361282	Longitud -66.465005	
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).		
24,057 kWh	17,29	
Capacidades del sistema existente (si aplica):		
Capacidad del sistema fotovoltaico	Capacidad de almacenamiento de batería	
kW	kWh	
PROPIUESTA DEL SISTEMA		
Tipo de Sistema	Costo Total	
Sistema fotovoltaico y almacenamiento en batería nuevo (PVS+BSS)	\$81,475.00	
Capacidad del sistema fotovoltaico	Capacidad de almacenamiento de batería	
17.29 kW	40.5 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'		
<input type="checkbox"/> Montaje en estructura liviana nueva	<input type="checkbox"/> Montaje en poste	
<input type="checkbox"/> Montaje en suelo	<input checked="" type="checkbox"/> 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 PROUESTO		
	Capacidad x unidad	Cantidad
Paneles fotovoltaicos:		
Canadian Solar	CS3W-455MS	38
Baterías:		
Tesla	1538000-XX-Y	3
Inversor / Controlador de Carga:		
Enphase	IQ8H-240-72-2-US	38

	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	\$ 12,221.25	\$ 2,444.25
Permisos	\$ 4,073.75	\$ 814.75
Otros:	\$ -	\$ -
Otros:	\$ -	\$ -
Otros:	\$ -	\$ -
Subtotal - Trabajos Pre-Instalación	\$ 16,295.00	\$ 3,259.00
Trabajos Civil		
Preparación del lugar	\$ 8,147.50	\$ 1,629.50
Estructuras de montaje / anclaje	\$ 16,295.00	\$ 3,259.00
Mitigación Ambiental ¹	\$ -	\$ -
Otros:	\$ -	\$ -
Otros:	\$ -	\$ -
Otros:	\$ -	\$ -
Subtotal - Trabajos Civil	\$ 24,442.50	\$ 4,888.50
Trabajos de Instalación		
Módulos PVs	\$ 12,221.25	\$ 2,444.25
Baterías	\$ 16,295.00	\$ 3,259.00
Inversor / Controlador de Carga	\$ 4,073.75	\$ 814.75
Cableado	\$ 8,047.50	\$ 1,609.50
Cuota Interconexión	\$ 100.00	\$ 20.00
Otros:	\$ -	\$ -
Otros:	\$ -	\$ -
Otros:	\$ -	\$ -
Subtotal - Trabajos de Instalación	\$ 40,737.50	\$ 8,147.50
Pago de Retendo		
Monto Bruto Total	\$ 81,475.00	
Pagos Netos	\$ 65,180.00	
Total de Retendo	\$ 16,295.00	

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.

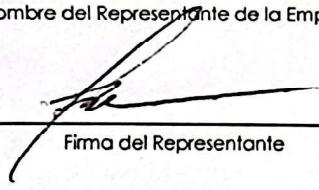
DOCUMENTOS DE APOYO REQUERIDOS

- 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:**Hector Ramos**

Nombre del Representante de la Empresa


Firma del Representante

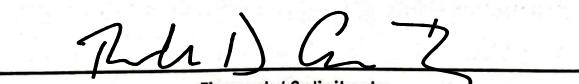
10/1/2025

Fecha

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

Certificado por:**Rolando Caudales Ruiz**

Nombre del Solicitante


Firma del Solicitante

1/13/2025

Fecha

INFORMACION SOBRE SISTEMA PROUESTO

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

INSTRUCCIONES:

- 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?

Sí
 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?

Sí
 No

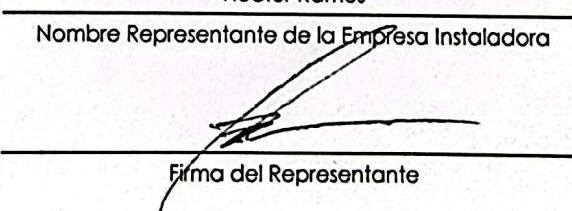
De contestar que SI, proveer la siguiente información:

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

Completado por:

Hector Ramos

Nombre Representante de la Empresa Instaladora


Firma del Representante

10/1/2025

Fecha



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](http://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.

Disclaimer: The PVWatts® Model ("Model") is provided by the National Renewable Energy Laboratory ("NREL"), which is operated by the Alliance for Sustainable Energy, LLC ("Alliance") for the U.S. Department of Energy ("DOE") and may be used for any purpose whatsoever.

The names DOE/NREL/ALLIANCE shall not be used in any representation, advertising, publicity or other manner whatsoever to endorse or promote any entity that adopts or uses the Model. DOE/NREL/ALLIANCE shall not provide any support, consulting, training or assistance of any kind with regard to the use of the Model or any updates, revisions or new versions of the Model.

YOU AGREE TO INDEMNIFY DOE/NREL/ALLIANCE, AND ITS AFFILIATES, OFFICERS, AGENTS, AND EMPLOYEES AGAINST ANY CLAIM OR DEMAND, INCLUDING REASONABLE ATTORNEYS' FEES, RELATED TO YOUR USE, RELIANCE, OR ADOPTION OF THE MODEL FOR ANY PURPOSE WHATSOEVER. THE MODEL IS PROVIDED BY DOE/NREL/ALLIANCE 'AS IS' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. IN NO EVENT SHALL DOE/NREL/ALLIANCE BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO CLAIMS ASSOCIATED WITH THE LOSS OF DATA OR PROFITS, WHICH MAY RESULT FROM ANY ACTION IN CONTRACT, NEGLIGENCE OR OTHER TORTIOUS CLAIM THAT ARISES OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE MODEL.

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

25,934 kWh/Year*

Month	Solar Radiation (kWh/m ² /day)	AC Energy (kWh)
January	5.30	2,201
February	5.86	2,181
March	6.10	2,489
April	5.54	2,158
May	5.16	2,085
June	5.25	2,054
July	5.38	2,178
August	5.47	2,216
September	5.31	2,076
October	5.39	2,176
November	5.05	1,993
December	5.13	2,127
Annual	5.41	25,934

Location and Station Identification

Requested Location	LINEAS VERDES HYDRO INC, CAR 633 CIALES PR 00638
Weather Data Source	Lat, Lng: 18.33, -66.46 0.8 mi
Latitude	18.33° N
Longitude	66.46° W

PV System Specifications

DC System Size	17.37 kW
Module Type	Standard
Array Type	Fixed (open rack)
System Losses	14.08%
Array Tilt	20°
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	Feb	Mar	Apr	May	June
	0%	0%	0%	0%	0%	0%
	July	Aug	Sept	Oct	Nov	Dec
	0%	0%	0%	0%	0%	0%

Performance Metrics

DC Capacity Factor	17.0%
---------------------------	--------------

<https://pvwatts.nrel.gov/pvwatts.php>

Su factura de electricidad

Para el periodo del 18 de julio de 2024 al 17 de agosto de 2024

CAUDALES RIOS,ROLANDO D
Su número de cuenta: 2321990000

Fecha de expedición de esta factura: 17 de agosto de 2024
Ciclo de facturación: 18



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

\$640.85

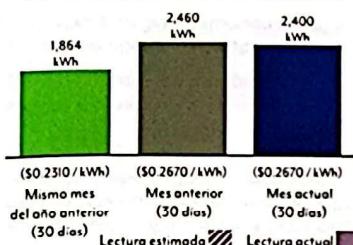
FECHA DE VENCIMIENTO

19 sep 2024

CONSUMO DE kWh

2,400 kWh

SU CONSUMO DE ENERGÍA



COMPARACIÓN

Este mes, usted consumió:



2.4% menos energía
en comparación con el mes anterior



28.8% más energía
en comparación con el año anterior

PROMEDIOS

Costo promedio por día
\$21.36

Promedio de consumo diario

80 kWh

Costo promedio de 12 meses por kWh
\$0.2591

¡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

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



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: 2321990000
Cantidad adeudada: \$640.85
Fecha de vencimiento:
19 de septiembre de 2024

Cantidad incluida:

CAUDALES RIOS,ROLANDO D
HC 2 BOX 4999
CIALES PR 00638-9899

00023219900001 000064085 000064085 2

¿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 Pública - RFP
- 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).



CamScanner

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.



Depósito(s) o bono(s) recibido(s): \$116.00

INFORMACIÓN DEL MEDIDOR Y DEL SERVICIO

Dirección del servicio: B-2 CAR 149 R-633 KI.3 HATO VIEJO CAMPAMENTO-LA GRAMA CIALES PR 00638

ID localidad: 2321990295

Tarifa: Servicio Comercial General a

Periodo: 18-jul-2024 a 17-ago-2024

Próxima lectura: 18-sep

Distribución Secundaria

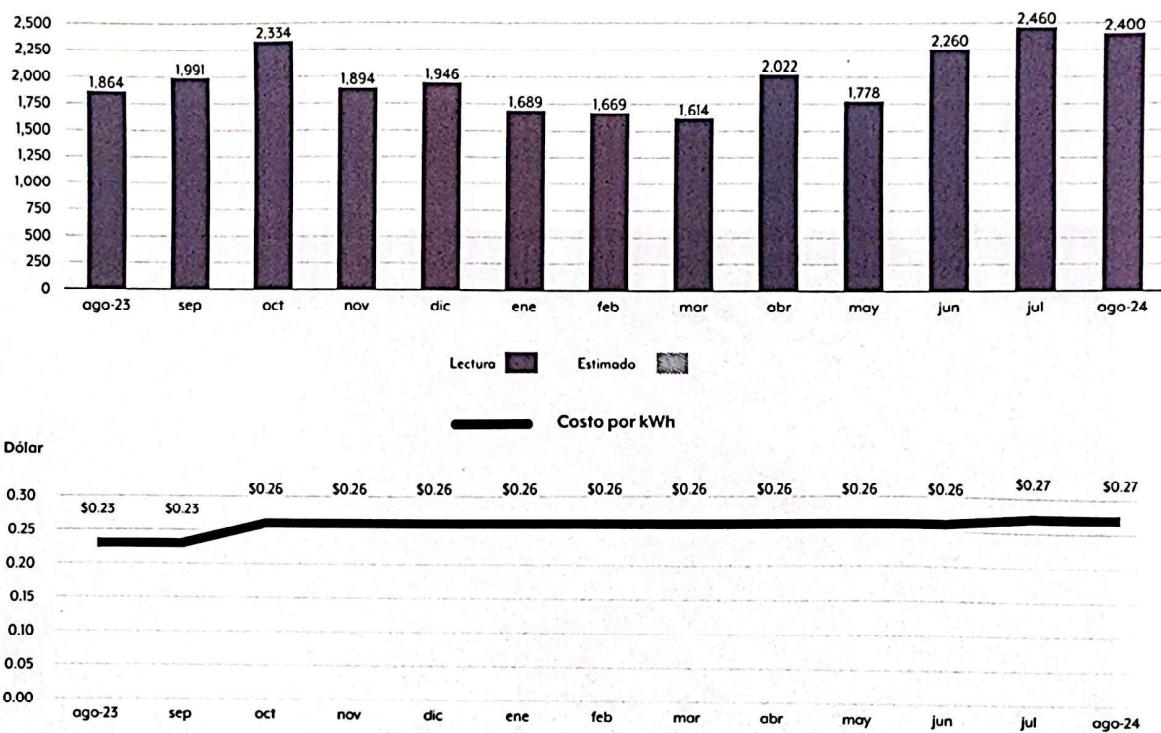
Número de contador	Fecha de lectura	Lectura actual	Fecha de lectura anterior	Lectura anterior	Consumo		Constante
					kWh	Días	
15110159	17-ago	63161.00 L	18-jul	60761.00	2,400.00	30	1

DETALLE DE LOS CARGOS CORRIENTES

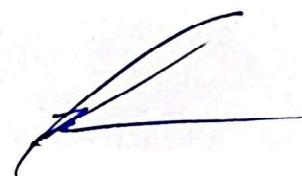
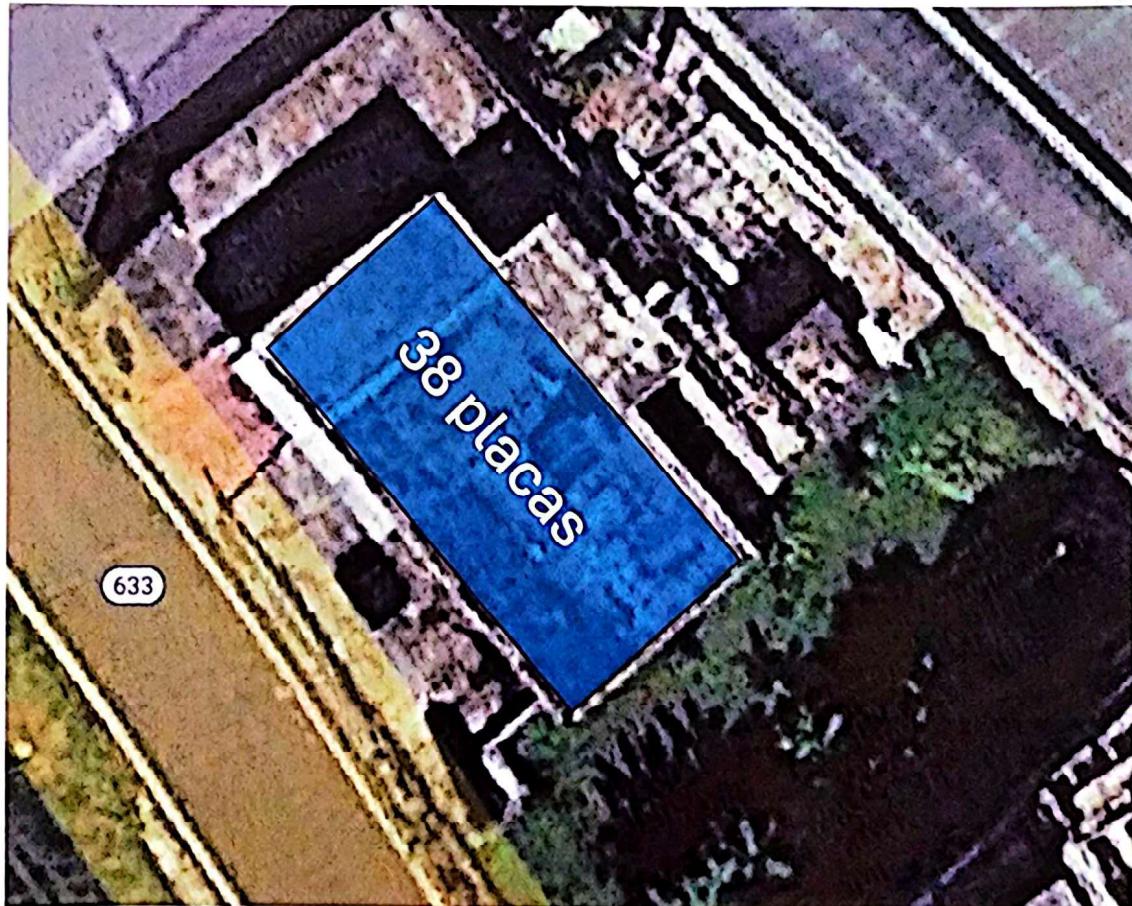
DESCRIPCIÓN	TARIFA	CARGO
Cargos por Servicio		
Cargo por Cliente		\$5.00
Cargo por Consumo	2,400 kWh x \$0.08449	\$202.78
Subtotal		\$207.78
Cláusulas de Reconciliación		
Cláusula FCA-Ajuste Cargo de Combustible	2,400 kWh x \$0.128051	\$307.32
Cláusula PPCA-Ajuste por Compra de Energía	2,400 kWh x \$0.036023	\$86.46
Cláusula CILTA-CELI (Municipios)	2,400 kWh x \$0.003755	\$9.01
Cláusula SUBA-Subsidios HH	2,400 kWh x \$0.010847	\$26.03
Cláusula SUBA-Subsidios NHH	2,400 kWh x \$0.000916	\$2.20
Cláusula EE-Cargo Eficiencia Energética	2,400 kWh x \$0.000853	\$2.05
Subtotal		\$433.07
Total		\$640.85

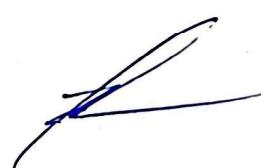
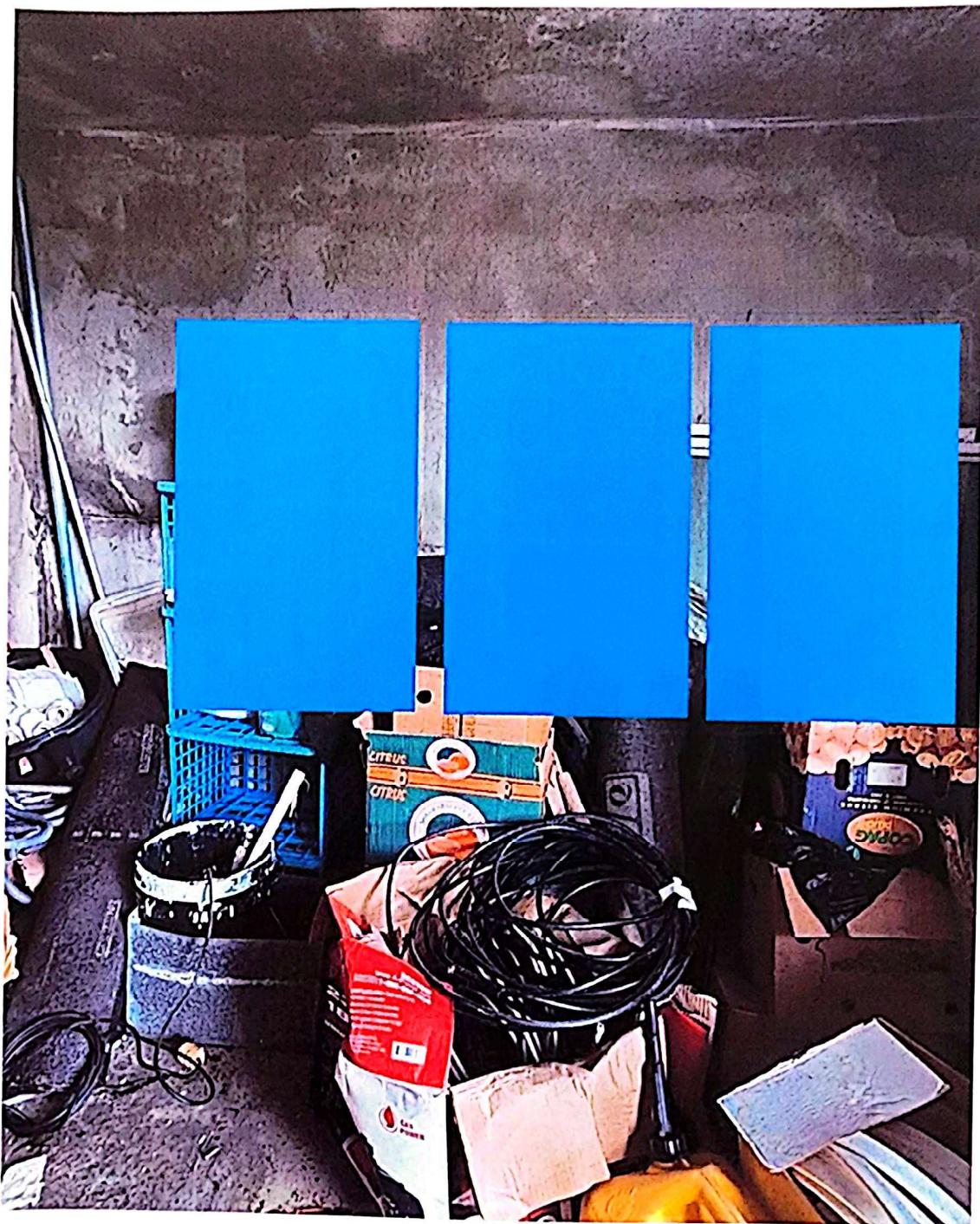
HISTORIAL DE CONSUMO (KWH)

ID localidad: 2321990295



Rolando Caudales Ruiz
Líneas Verdes Hidro Inc
18.361282, -66.465005

A handwritten signature in black ink, appearing to read "Rolando Caudales Ruiz".

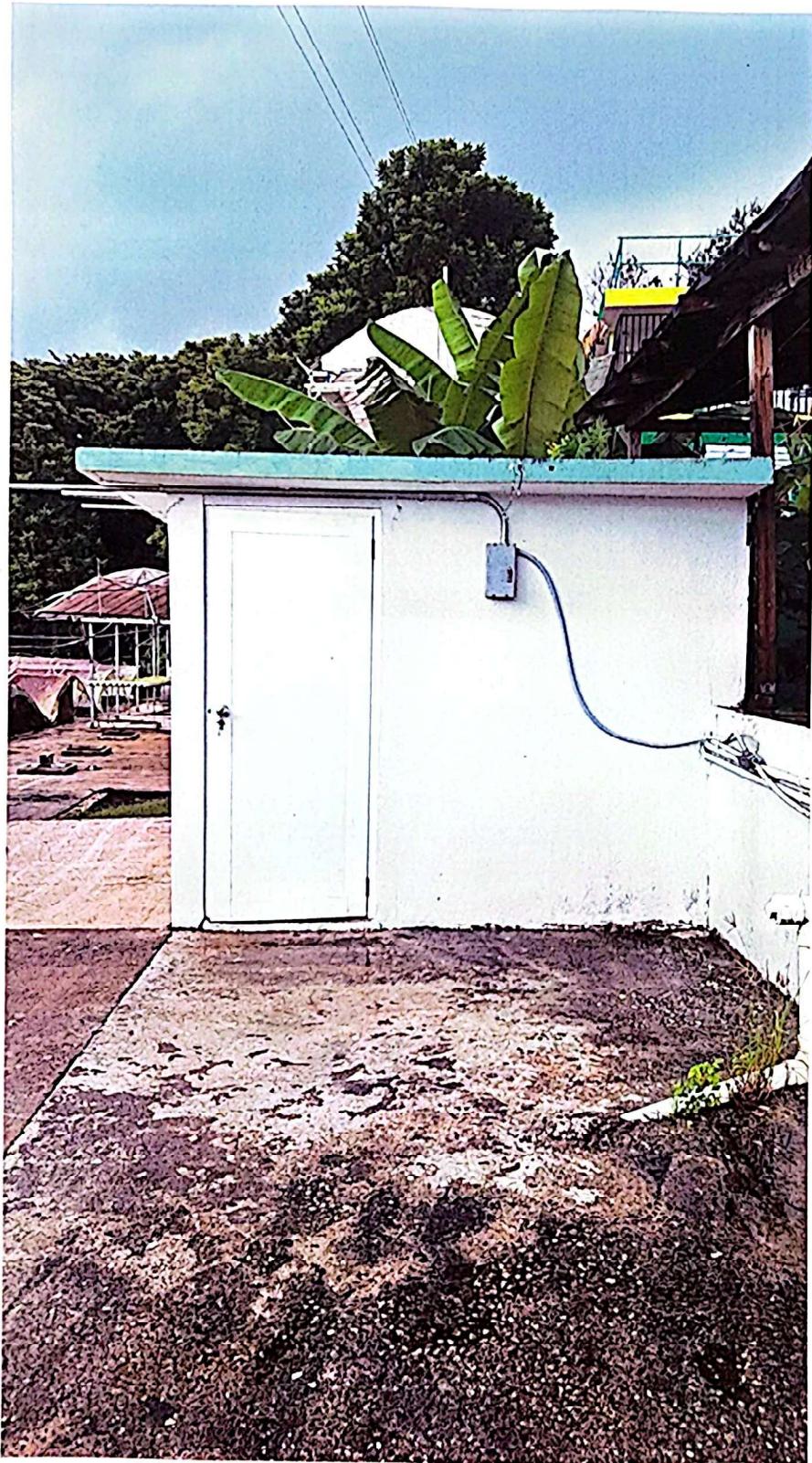
A handwritten signature in blue ink, appearing to read 'J. S. S. 2023'.







A handwritten signature in black ink, likely belonging to the owner or a representative of the property.



A blue ink signature, likely a personal or professional mark.

35





FER PROGRAM

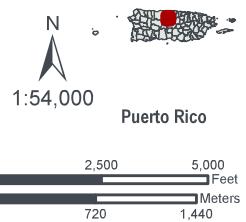
**Figure B 7-1:
Critical Habitat Map**

Applicant ID: PR-FER-00070

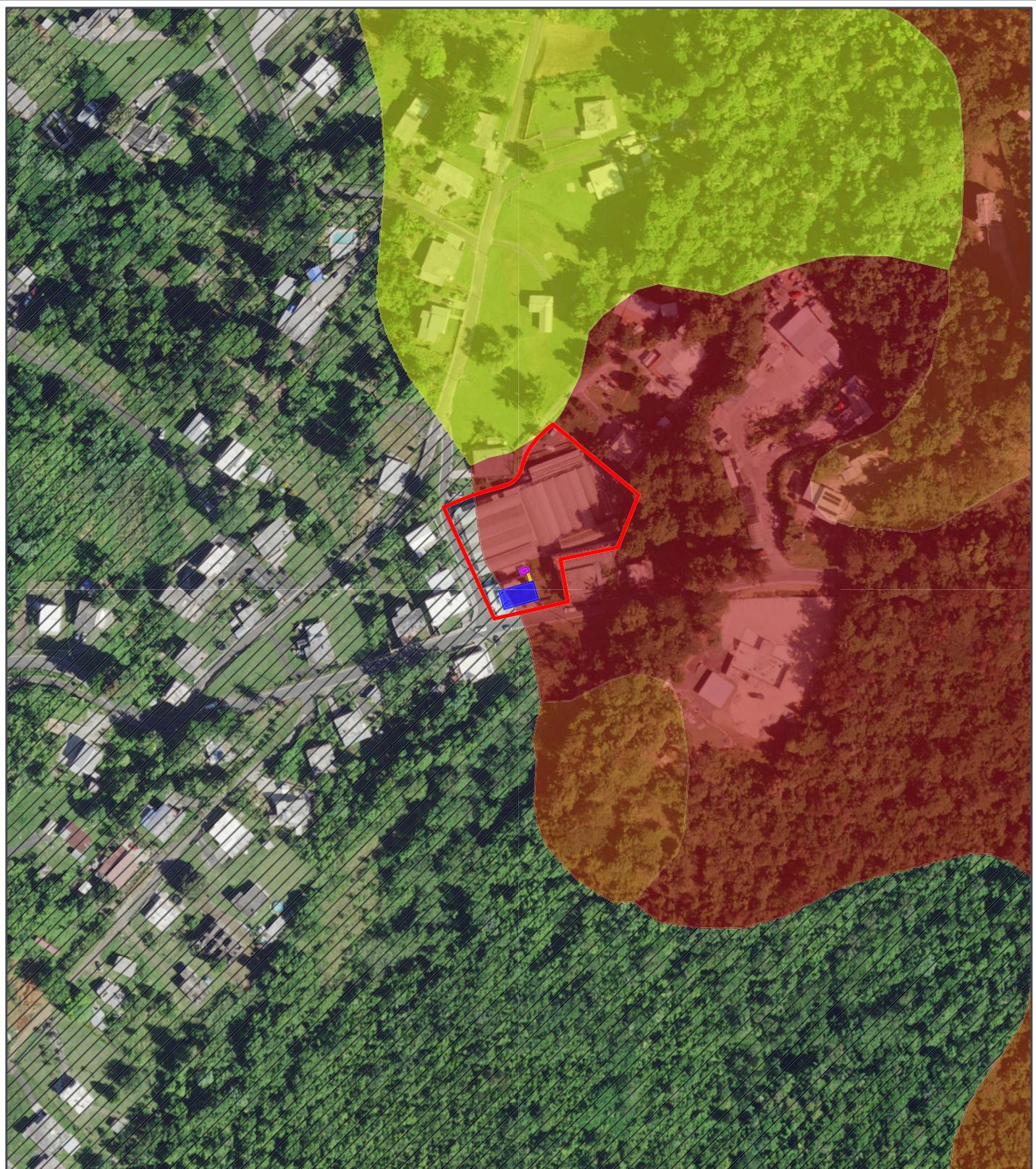
- Site
- Site Parcel
- Buffer (100-ft)
- Critical Habitat - Final
- National Wildlife Refuges

Carretera 633 km 1.4 Sector La
Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
18.360863, -66.465247

Data Source: https://services.arcgis.com/QVENGdaPbd4LUkL/arcgis/rest/services/USFWS_Critical_Habitat/Base_Map_ESRI_ArcGIS_Online,
accessed June 2025
Updated: 6/6/2025
Layout: Critical Habitat
Apxr: 78764_ferTier2Maps



**Attachment 8 Prime
Farmland Map and
Soil Map**



FER PROGRAM

Figure B 8-1: Prime Farmland Map

Applicant ID: PR-FER-00070

SWCA
ENVIRONMENTAL CONSULTANTS

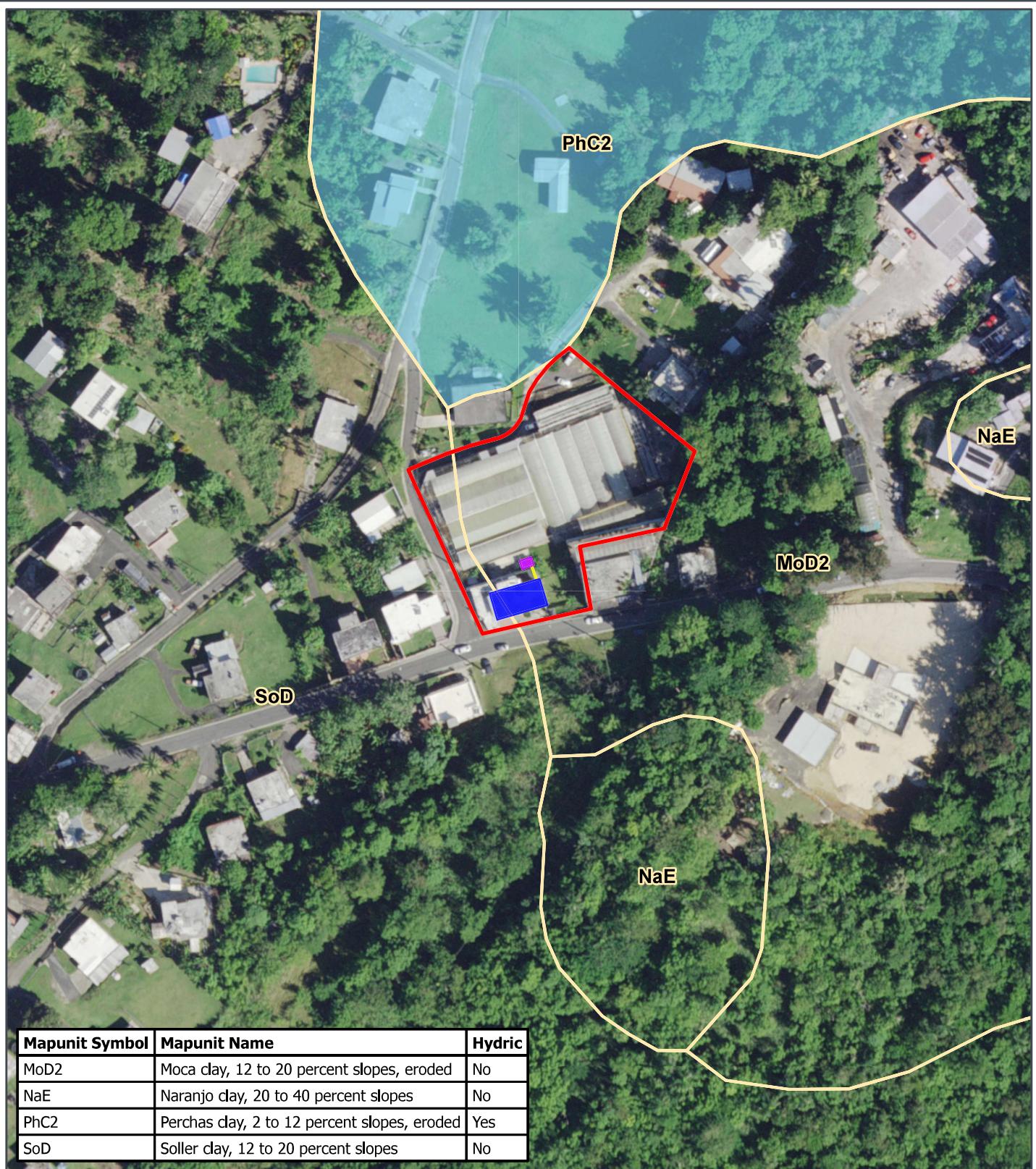
- Site Parcel
- Roof Mounted Photovoltaic System
- Wall mounted Battery/Inverter
- Proposed Above-Ground Electrical Line Route
- All areas are prime farmland
- Farmland of statewide importance
- Farmland of statewide importance, if irrigated

- 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

Carretera 633 km 1.4 Sector La
Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
18.360863, -66.465247

Data Source: <https://websoilsurvey.nrcs.usda.gov/app/>
Base Map: USA NAIP Imagery
Imagery Year: 2022
Updated: 6/6/2025
Layout: Prime Farmland
Aprix: 78764_feTier2Maps

N
1:2,500
Puerto Rico
0 110 220 Feet
0 30 60 Meters



FER PROGRAM

USDA Soils Map

Applicant ID: PR-FER-00070

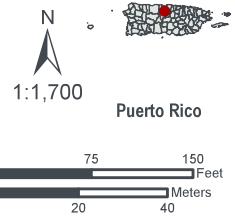
SWCA
ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Proposed Above-Ground Electrical Line Route
- Wall mounted Battery/Inverter
- Soil Mapunit
- Hydric Soil

Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001

Project Coordinates:
18.360863, -66.465247

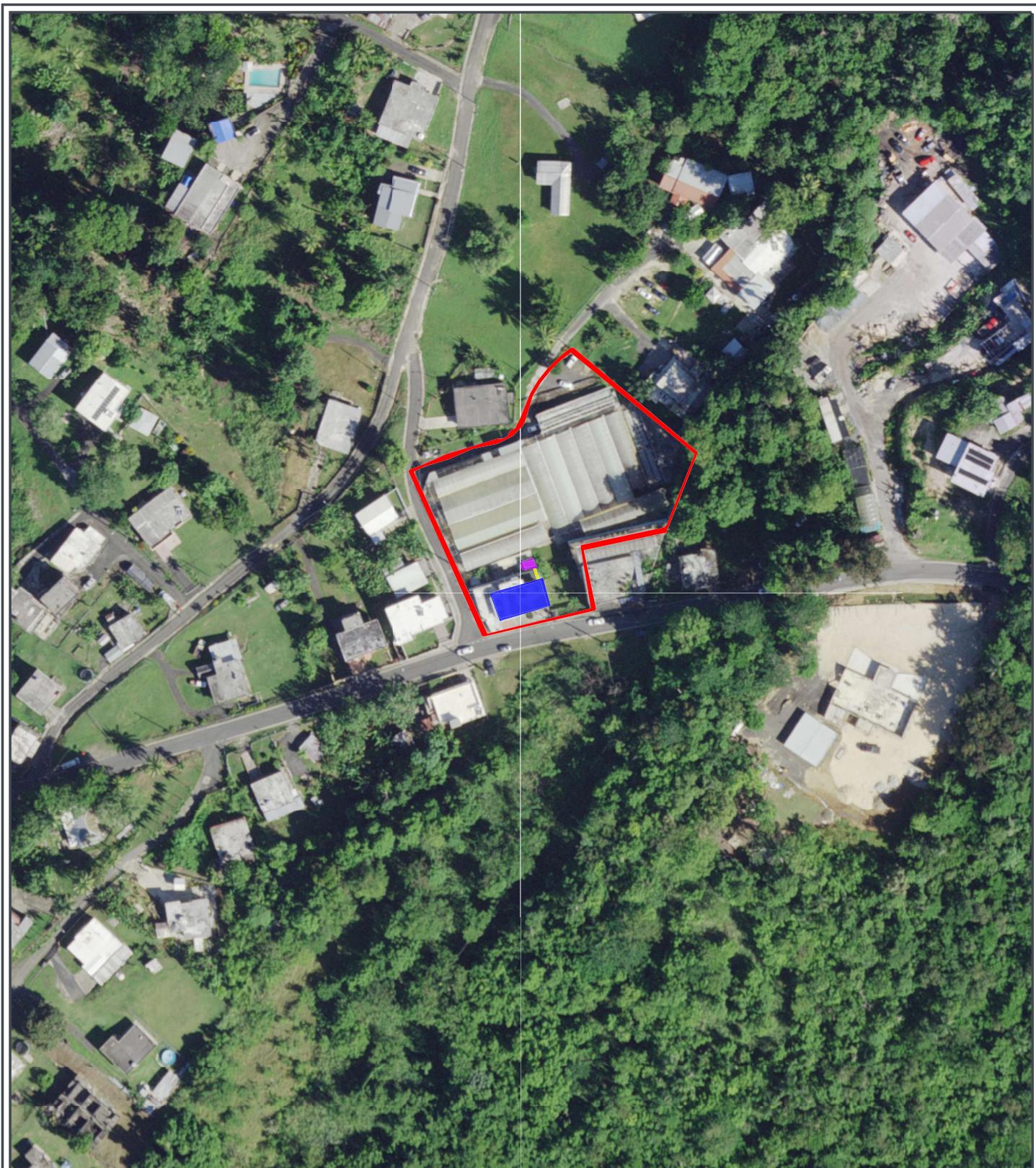
Data Source: <https://websoilsurvey.nrcs.usda.gov/app/>
Base Map: USA NAIP Imagery
Imagery Year: 2022
Updated: 8/20/2025
Layout: Soils
Aprx: 78764_ferTier2Maps



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-00070

SWCA
ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Wall mounted Battery/Inverter
- Proposed Above-Ground Electrical Line Route
- 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)

Carretera 633 km 1.4 Sector La Grama
Barrio Hato Viejo
Ciales, PR 00638

Parcel ID: 108-000-003-12-001
Center of Map:
66.465207°W 18.36088°N

Data Source: https://gis.fema.gov/arcgis/rest/services/DR/PuertoRico_ABFE_1PCT/MapServer

Base Map: USA NAIP Imagery

Imagery Year: 2022

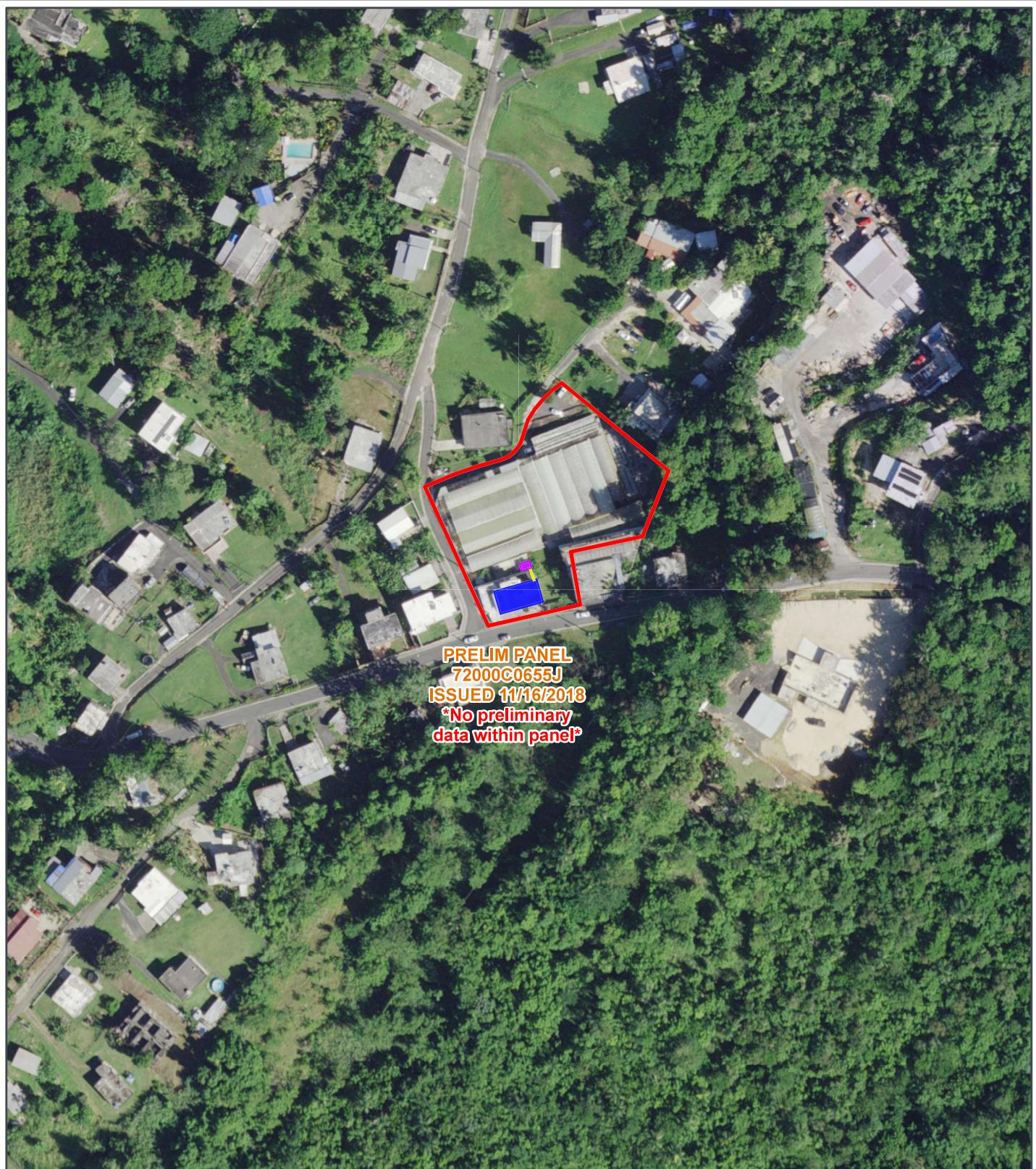
Updated: 6/25/2025

Layout: ABFE 1Pct

Aprx: 78764_ferTier2Maps

N
1:1,700 Puerto Rico

0 75 150
Meters
0 20 40



FER PROGRAM

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

Applicant ID: PR-FER-00070

SWCA
ENVIRONMENTAL CONSULTANTS

	Site Parcel		Zone AE
	Roof Mounted Photovoltaic System		Zone AH
	Proposed Above-Ground Electrical Line Route		Zone AO
	Wall mounted Battery/Inverter		Open Water
	Preliminary Base Flood Elevations		Zone VE
	Preliminary FIRM Panel Index		Zone X - Shaded (500-year floodplain)
	Zone A		Floodway
			Zone X - Unshaded

Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo Ciales, PR 00638
Parcel ID: 108-000-003-12-001

Project Coordinates:
18.360863, -66.465247

Data Source: <https://hazards.fema.gov/gis/nfhlrest/services/public/NFHL/MapServer>

Base Map: USA NAIP Imagery

Imagery Year: 2022

Updated: 9/1/2025

Layout: Preliminary Floodplain

Aprix: 78764_ferTier2Maps



Puerto Rico



Attachment 10

SHPO Consultation

and Previously

Recorded Cultural

Resources Map

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

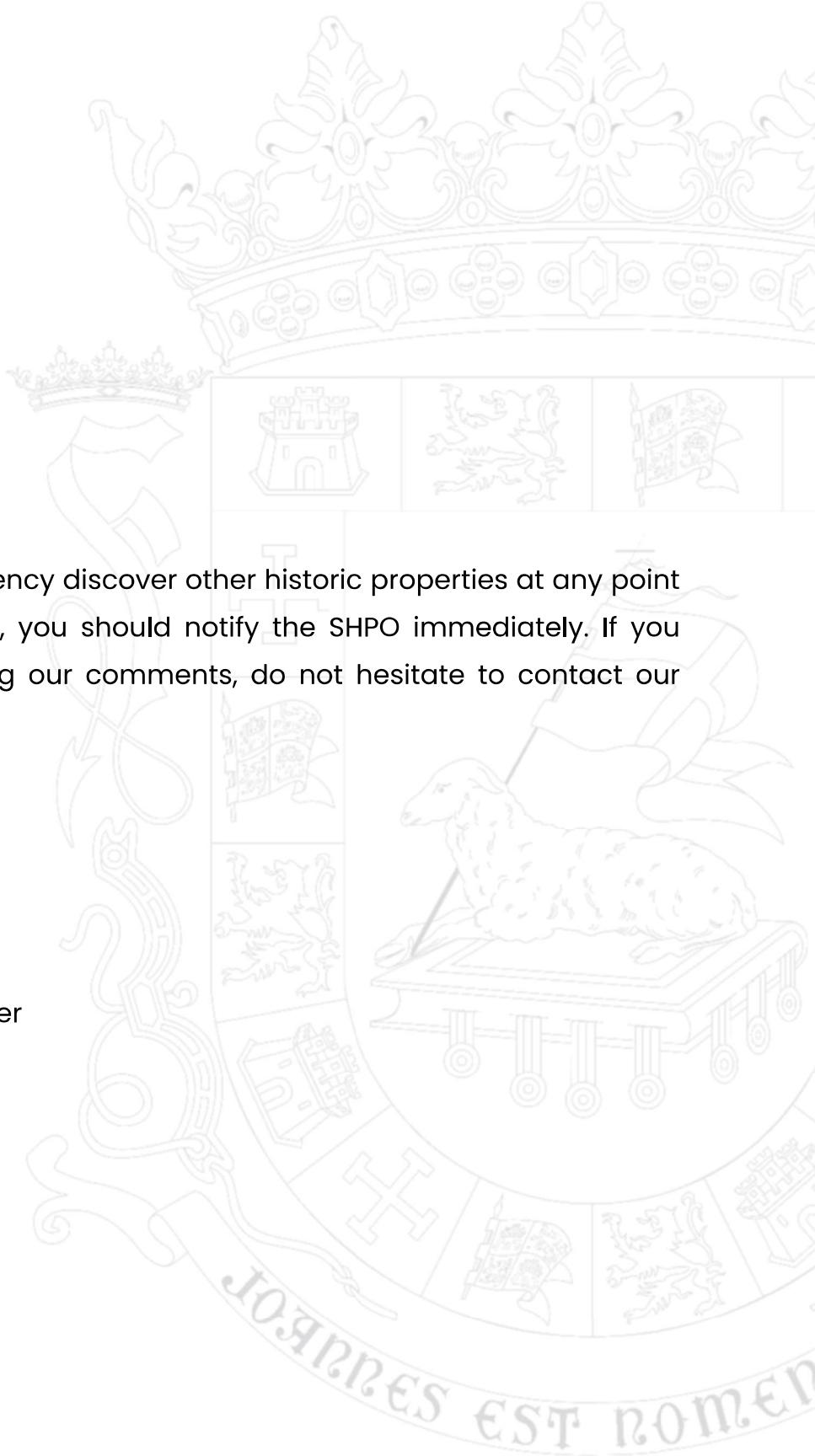
Please note that should the Agency discover other historic properties at any point during project implementation, you should notify the SHPO immediately. If you have any questions concerning our comments, do not hesitate to contact our Office.

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
Historic Preservation Manager

Enclosures



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.

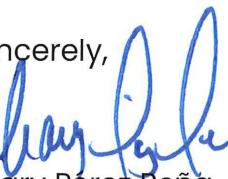
One of the Responsible Entity's many responsibilities under 24 C.F.R. Part 58 is consulting with State, Federal, and non-federal entities in preparing an Environmental Review Record (**ERR**). Regarding a Responsible Entity's interactions with State, Federal, and non-Federal entities, 24 C.F.R. § 58.14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

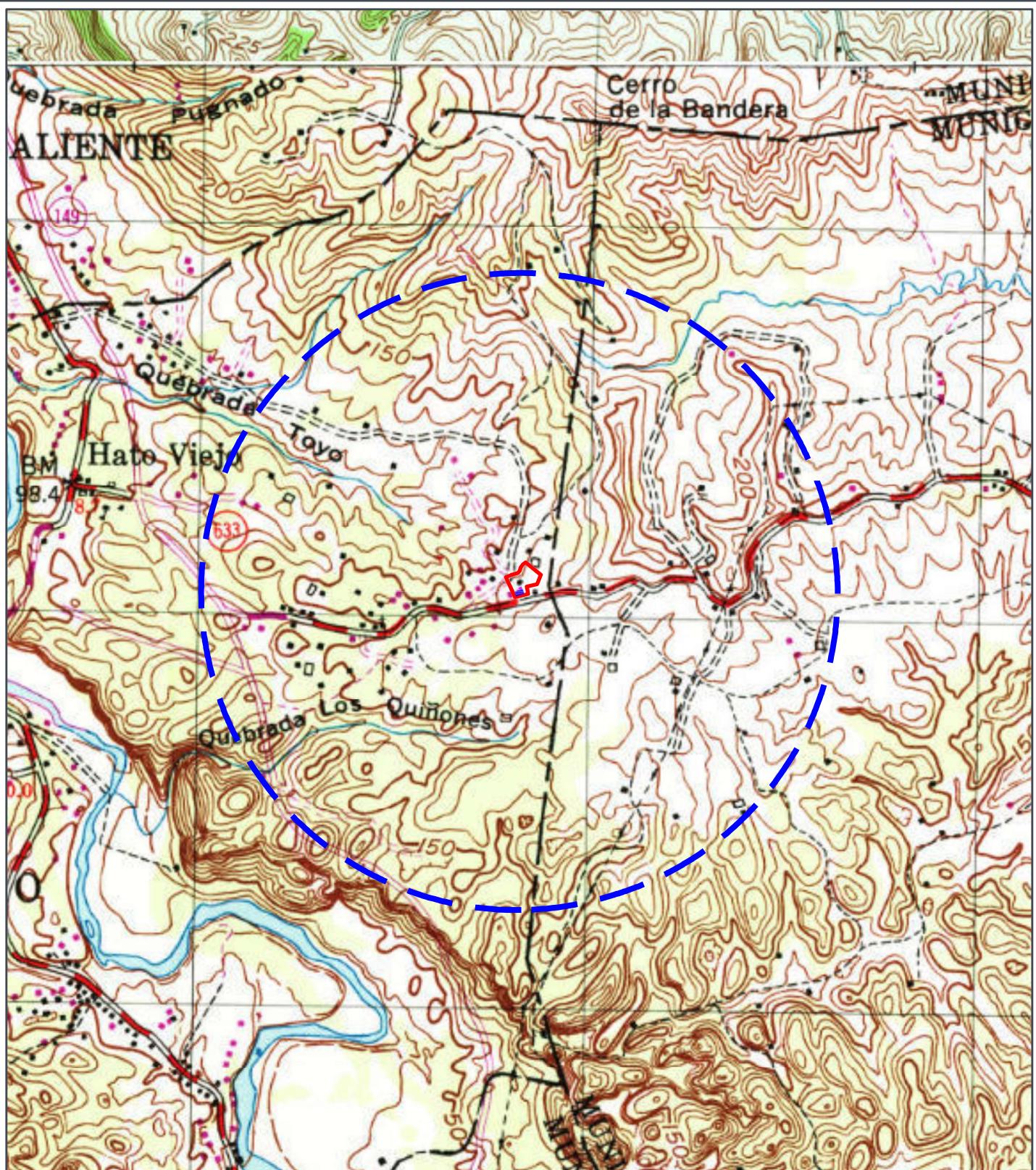
To effectively manage available environmental resources and expedite the preparation of ERRs, PRDOH—as Responsible Entity—wishes to delegate the task of consulting with State, Federal, and non-Federal entities contained in 24 C.F.R. § 58.14. Therefore, PRDOH hereby authorizes Alberto Mercado Vargas, 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 11-1:
Previously Recorded
Cultural Resources
Map

Applicant ID: PR-FER-00070

SWCA®
ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Wall mounted Battery/ Inverter
- Proposed Above-Ground Electrical Line Route
- 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
- Guayanilla 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

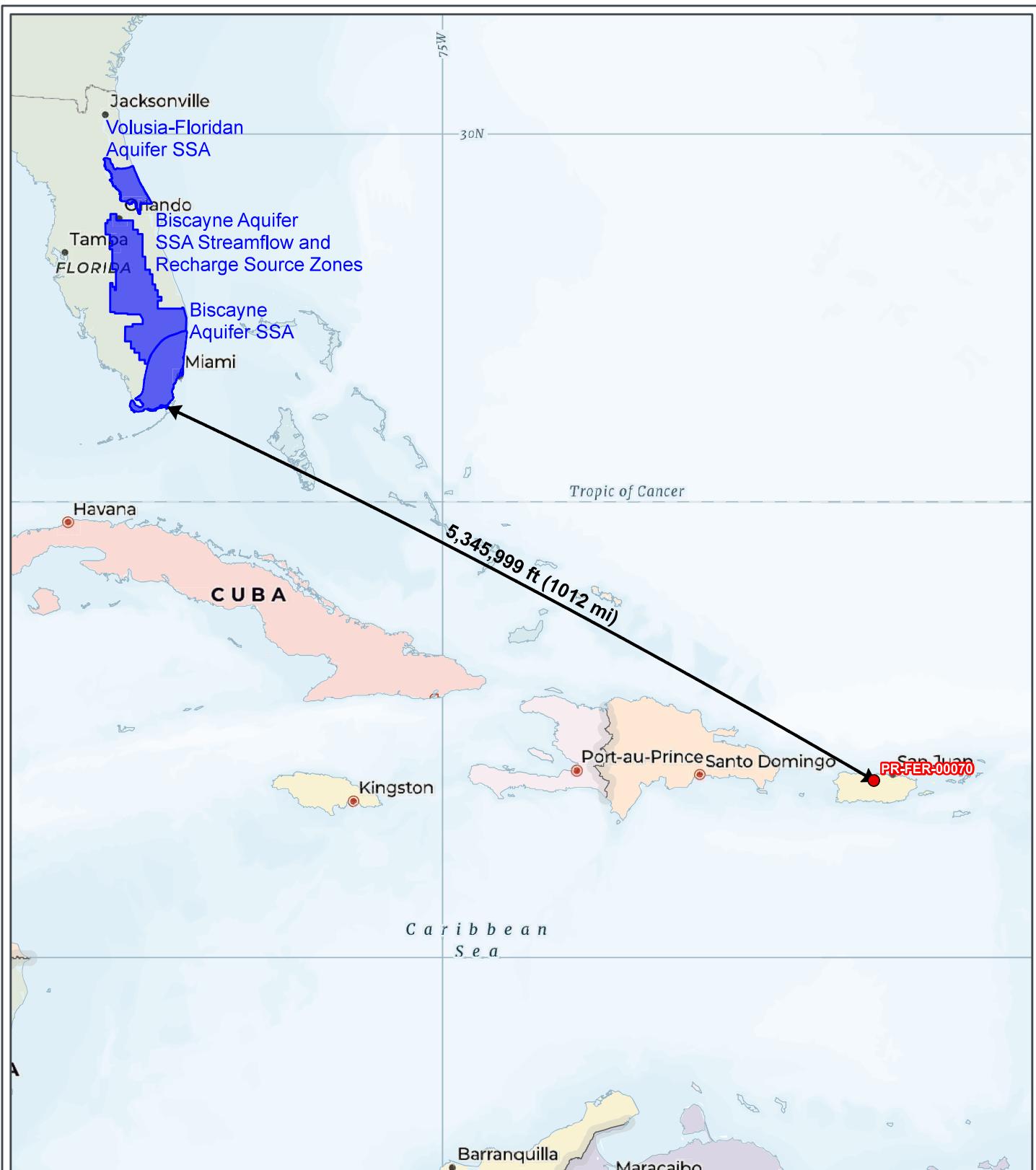
Carretera 633 km 1.4 Sector La
Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
18.360863, -66.465247

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
Apx: 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

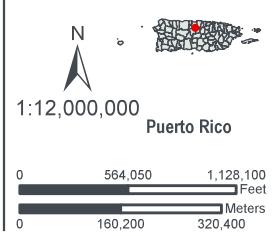
Figure 11-1: Sole Source Aquifers Map

Applicant ID: PR-FER-00070

● Site

■ Sole Source Aquifers

Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
18.360863, -66.465247



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
Apxr: 78764_ferTier2Maps

Attachment 12
Wetlands Protection
Map



FER PROGRAM

**Figure B 12-1:
Wetlands Protection
Map**

Applicant ID: PR-FER-00070

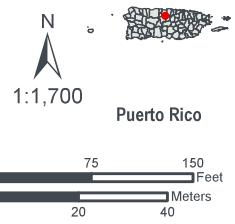
SWCA
ENVIRONMENTAL CONSULTANTS

- Site Parcel
- Roof Mounted Photovoltaic System
- Wall mounted Battery/Inverter
- Proposed Above-Ground Electrical Line Route
- NHD Stream
- NHD Waterbody

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

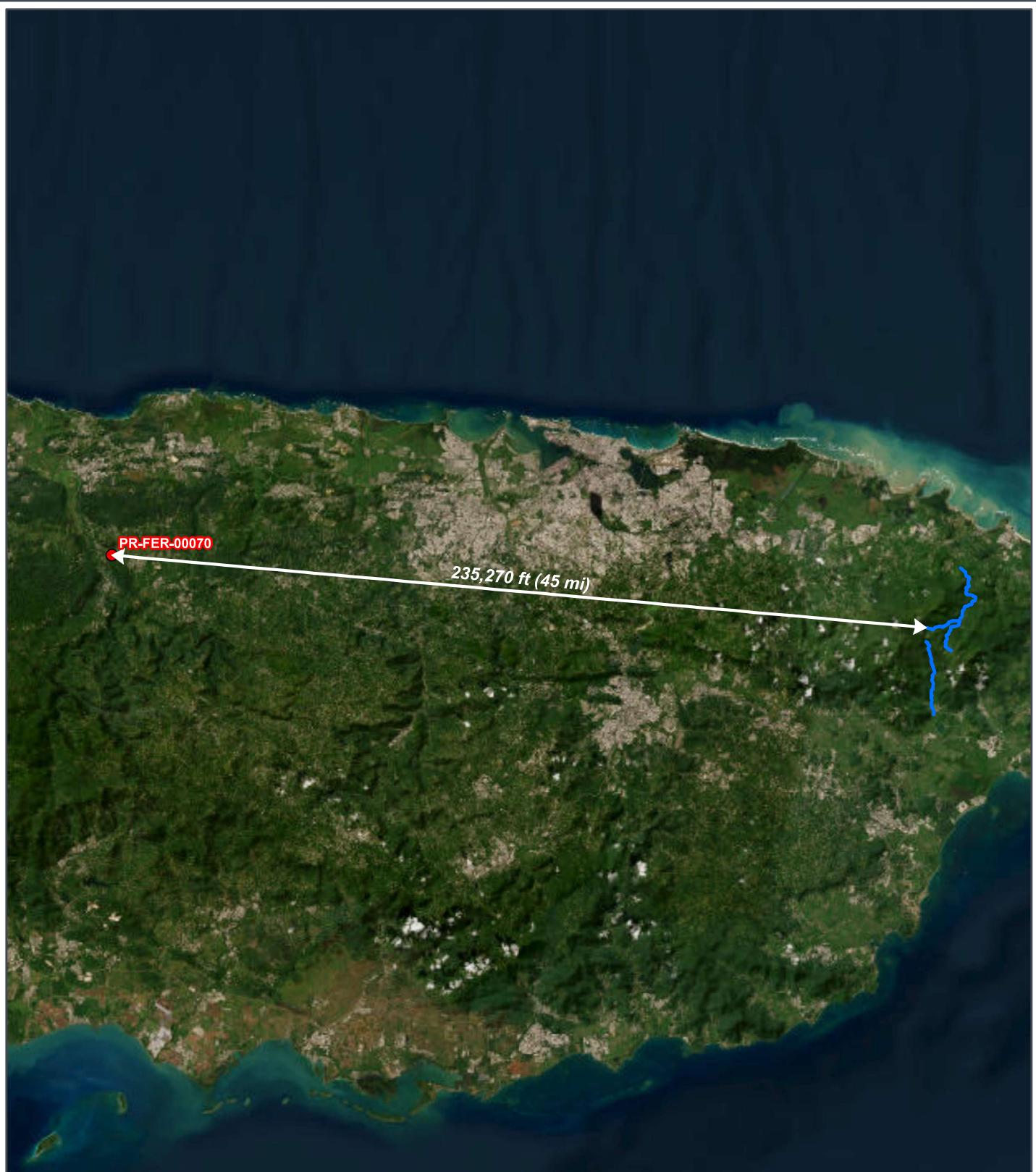
Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
18.360863, -66.465247

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



Attachment 13

Wild and Scenic Rivers Map



FER PROGRAM

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

Applicant ID: PR-FER-00070

SWCA
ENVIRONMENTAL CONSULTANTS

● Site

— National Wild and Scenic River

Carretera 633 km 1.4 Sector La
Grama Barrio Hato Viejo
Ciales, PR 00638
Parcel ID: 108-000-003-12-001
18.360863, -66.465247

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
1:480,000
Puerto Rico
0 20,000 40,000 Feet
0 6,000 12,000 Meters

Appendix C

Environmental Site Inspection Report

ENVIRONMENTAL FIELD ASSESSMENT FORM



Applicant Name: Rolando Caudales Ruiz	Program ID: PR-FER-00070
Building Coordinates: 18.360863, -66.465247	Parcel ID: 108-000-003-12-001
Street Address: Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo	Municipio: Ciales
Zip Code: 00638	

Inspector Name: Eileen Ortiz	Inspection Date: 05/29/2025
------------------------------	-----------------------------

***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):	Plant Nursery	Comment: Residence used as administrative offices and hydroponic nursery. Refer to photo log pictures #01 and #04.
Bldg foundation:	Slab	Comment:
# of Stories:	2	Comment: Refer to photo log pictures #02 and #10.
Detached garage / carport present?	Yes	Comment: The attached carport is located on the left side of the building. Refer to photo log pictures #01 and #02.
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?	Above	Comment: The applicant informed that the existing above-ground electric line will be used, but the exact location is unknown. Refer to photo log pictures #02 and #07.
---	-------	--

ENVIRONMENTAL FIELD ASSESSMENT FORM



ENVIRONMENTAL CONSULTANTS

If installing a new electric meter, will it be ground mounted or wall mounted?	N/A	Comment: The applicant stated that the existing electric meter will be used. Refer to photo log picture #07.
Will the batteries be ground mounted or wall mounted?	Wall Mounted	Comment: Refer to photo log pictures #05 and #06.
Is there evidence of disaster damage?	No	Comment:
Is a septic system present? If Yes report apparent condition.	No	Comment:
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?	No	Comment:
Are above-ground tanks >10 gallons present? If Yes, also state condition.	Yes	Comment: There are two connected water tanks: one 800-gallon located on the left side and one 500-gallon located at the back of the building; both are in good condition. Additionally, there is a 30,000-gallon underground water tank located beneath the concrete floor where the shade houses are established Refer to photo log pictures #08, #09 and #10.
Are 55-gallon drums present? If Yes, also state condition.	Yes	Comment: There is one 55-gallon drum located at the front of the building in good condition. Refer to photo log picture #11.
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?	No	Comment:

ENVIRONMENTAL FIELD ASSESSMENT FORM



ENVIRONMENTAL CONSULTANTS

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?	Yes	Comment: According to the National Wetlands Inventory (NWI) there are wetlands approximately 1,041 feet from the project footprint, but there will be no impact on the wetlands. Refer to photo log picture #12.

Building Environmental Conditions

Does the building appear safe to enter?	Yes	Comment:
Is peeling or flaking paint visible on the exterior?	No	Comment:
Are any potential asbestos-containing materials visible on the building exterior?	No	Comment:
Is any mold visible on the outside of the building?	No	Comment:
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.

Inspector Signature

Eileen Ortiz

May 29, 2025

ENVIRONMENTAL FIELD ASSESSMENT FORM

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-00070	Photographer: Eileen Ortiz
Location Address: Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo, Ciales, PR 00638	Coordinates: 18.360863, -66.465247

Photo #: 01	Date: May 29, 2025		
Photo Direction: North			
Description: This picture overviews the front of the building. Additionally, the solar panels will be installed on the roof of the building.			

29 may 2025 2:08:15 p. m.
18.3607814N 66.46513974W
340° N
Puerto Rico 633
Hato Viejo
Ciales

Photo #: 02	Date: May 29, 2025		
Photo Direction: Northeast			
Description: This picture overviews the front of the building from a left angle.			

29 may 2025 2:04:27 p. m.
18.36068928N 66.46532022W
33° NE
Hato Viejo
Ciales

Project #: PR-FER-00070	Photographer: Eileen Ortiz
Location Address: Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo, Ciales, PR 00638	Coordinates: 18.360863, -66.465247

Photo #: 03	Date: May 29, 2025		
Photo Direction: Northeast			
Description: This picture overviews the plants nursery area.			

29 may 2025 2:10:13 p. m.
18.36092225N 66.46532991W
51° NE
Hato Viejo
Ciales

Photo #: 04	Date: May 29, 2025		
Photo Direction: Northwest			
Description: This picture shows the production area.			

29 may 2025 2:16:23 p. m.
18.36104198N 66.46511137W
294° NW
Puerto Rico 633
Hato Viejo
Ciales

Project #: PR-FER-00070	Photographer: Eileen Ortiz
Location Address: Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo, Ciales, PR 00638	Coordinates: 18.360863, -66.465247

<p>Photo #: 05</p> <p>Date: May 29, 2025</p> <p>Photo Direction: Southeast</p> <p>Description: This picture overviews the exterior of the structure where the batteries will be installed.</p>	 <div style="position: absolute; top: 168px; left: 0px; width: 100px; height: 100px; background-color: black; opacity: 0.5; display: flex; align-items: center; justify-content: center;"> N </div> <div style="position: absolute; bottom: 0px; left: 0px; width: 100px; height: 100px; background-color: black; opacity: 0.5; display: flex; align-items: center; justify-content: center;"> S </div> <div style="position: absolute; bottom: 0px; right: 0px; width: 100px; height: 100px; background-color: black; opacity: 0.5; display: flex; align-items: center; justify-content: center;"> E </div> <div style="position: absolute; top: 0px; right: 0px; width: 100px; height: 100px; background-color: black; opacity: 0.5; display: flex; align-items: center; justify-content: center;"> W </div>
--	---

<p>Photo #: 06</p> <p>Date: May 29, 2025</p> <p>Photo Direction: Southeast</p> <p>Description: This picture overviews inside the structure where the batteries will be installed.</p>	 <div style="position: absolute; top: 548px; left: 0px; width: 100px; height: 100px; background-color: black; opacity: 0.5; display: flex; align-items: center; justify-content: center;"> N </div> <div style="position: absolute; bottom: 0px; left: 0px; width: 100px; height: 100px; background-color: black; opacity: 0.5; display: flex; align-items: center; justify-content: center;"> S </div> <div style="position: absolute; bottom: 0px; right: 0px; width: 100px; height: 100px; background-color: black; opacity: 0.5; display: flex; align-items: center; justify-content: center;"> E </div> <div style="position: absolute; top: 0px; right: 0px; width: 100px; height: 100px; background-color: black; opacity: 0.5; display: flex; align-items: center; justify-content: center;"> W </div>
---	--

Project #: PR-FER-00070	Photographer: Eileen Ortiz
Location Address: Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo, Ciales, PR 00638	Coordinates: 18.360863, -66.465247

<p>Photo #: 07</p> <p>Date: May 29, 2025</p> <p>Photo Direction: North</p> <p>Description: This picture overviews the existing electric meter located at the front of the building.</p>	 <div style="position: absolute; top: 15%; left: 15%; width: 30%; height: 80%; background-color: white; padding: 5px; border: 1px solid black; transform: rotate(-45deg);"> 29 may 2025 2:09:53 p. m. 18.36082853N 66.46528493W 339° N Hato Viejo Ciales </div>
---	--

<p>Photo #: 08</p> <p>Date: May 29, 2025</p> <p>Photo Direction: South</p> <p>Description: This picture overviews a 30,000-gallon underground water tank. It is located beneath the concrete floor where the shade houses are established.</p>	 <div style="position: absolute; top: 15%; left: 15%; width: 30%; height: 80%; background-color: white; padding: 5px; border: 1px solid black; transform: rotate(-45deg);"> 29 may 2025 2:13:22 p. m. 18.36125793N 66.46517772W 190° S Puerto Rico 633 Hato Viejo Ciales </div>
--	--

Project #: PR-FER-00070	Photographer: Eileen Ortiz
Location Address: Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo, Ciales, PR 00638	Coordinates: 18.360863, -66.465247

Photo #: 09	Date: May 29, 2025	
Photo Direction: South		
Description: This picture overviews one connected 800-gallon water tank located on the left side of the building.		

Photo #: 10	Date: May 29, 2025	
Photo Direction: Southeast		
Description: This picture overviews one connected 500-gallon water tank located on the left side beneath the building.		

Project #: PR-FER-00070	Photographer: Eileen Ortiz
Location Address: Carretera 633 km 1.4 Sector La Grama Barrio Hato Viejo, Ciales, PR 00638	Coordinates: 18.360863, -66.465247

Photo #: 11	Date: May 29, 2025	
Photo Direction: West		
Description: This picture overviews one 55-gallon drum located at the front of the building.		

Photo #: 12	Date: May 29, 2025	
Photo Direction: North		
Description: This picture provides an overview of the approximate direction of the wetland area, which, according to the National Wetlands Inventory (NWI), is located approximately 1,041 feet from the project footprint, but there will be no impact on the wetlands.		

Appendix D

Quote



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:	
Power Solar LLC	Hector Ramos	
INFORMACION DEL SOLICITANTE		
Nombre del Solicitante:	Nombre del Negocio:	
Rolando Caudales Ruiz	Líneas Verdes Hidro Inc	
Dirección de la propiedad:	Municipio:	Código postal:
B-2 CAR 149 R-633 K1.3 HATO VIEJO CAMPAMENTO-LA GRAMA	Ciales	00638
Coordenadas de la propiedad (proporcione hasta seis decimales)		
Latitud 18.361282	Longitud -66.465005	
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).		
24,057 kWh	17,29	
Capacidades del sistema existente (si aplica):		
Capacidad del sistema fotovoltaico	Capacidad de almacenamiento de batería	
kW	kWh	
PROPIUESTA DEL SISTEMA		
Tipo de Sistema	Costo Total	
Sistema fotovoltaico y almacenamiento en batería nuevo (PVS+BSS)	\$81,475.00	
Capacidad del sistema fotovoltaico	Capacidad de almacenamiento de batería	
17.29 kW	40.5 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'		
<input type="checkbox"/> Montaje en estructura liviana nueva	<input type="checkbox"/> Montaje en poste	
<input type="checkbox"/> Montaje en suelo	<input checked="" type="checkbox"/> 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 PROUESTO		
	Capacidad x unidad	Cantidad
Paneles fotovoltaicos:		
Canadian Solar	CS3W-455MS	38
Baterías:		
Tesla	1538000-XX-Y	3
Inversor / Controlador de Carga:		
Enphase	IQ8H-240-72-2-US	38

	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	\$ 12,221.25	\$ 2,444.25	
Permisos	\$ 4,073.75	\$ 814.75	
Otros:	\$ -	\$ -	
Otros:	\$ -	\$ -	
Otros:	\$ -	\$ -	
Subtotal - Trabajos Pre-Instalación	\$ 16,295.00	\$ 3,259.00	
Trabajos Civil			
Preparación del lugar	\$ 8,147.50	\$ 1,629.50	
Estructuras de montaje / anclaje	\$ 16,295.00	\$ 3,259.00	
Mitigación Ambiental ¹	\$ -	\$ -	
Otros:	\$ -	\$ -	
Otros:	\$ -	\$ -	
Otros:	\$ -	\$ -	
Subtotal - Trabajos Civil	\$ 24,442.50	\$ 4,888.50	
Trabajos de Instalación			
Módulos PVs	\$ 12,221.25	\$ 2,444.25	
Baterías	\$ 16,295.00	\$ 3,259.00	
Inversor / Controlador de Carga	\$ 4,073.75	\$ 814.75	
Cableado	\$ 8,047.50	\$ 1,609.50	
Cuota Interconexión	\$ 100.00	\$ 20.00	
Otros:	\$ -	\$ -	
Otros:	\$ -	\$ -	
Otros:	\$ -	\$ -	
Subtotal - Trabajos de Instalación	\$ 40,737.50	\$ 8,147.50	
Pago de Retendo			
Monto Bruto Total	\$ 81,475.00		
Pagos Netos	\$ 65,180.00		
Total de Retendo	\$ 16,295.00		

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.

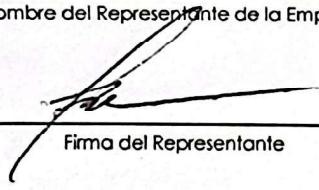
DOCUMENTOS DE APOYO REQUERIDOS

- 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:**Hector Ramos**

Nombre del Representante de la Empresa


Firma del Representante

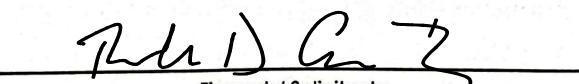
10/1/2025

Fecha

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

Certificado por:**Rolando Caudales Ruiz**

Nombre del Solicitante


Firma del Solicitante

1/13/2025

Fecha

INFORMACION SOBRE SISTEMA PROUESTO

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

INSTRUCCIONES:

- 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?

Sí
 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?

Sí
 No

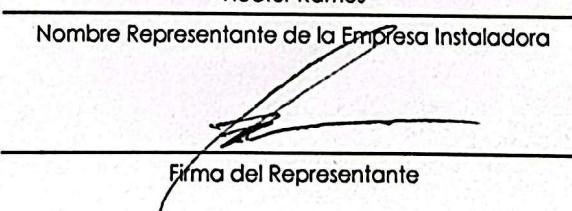
De contestar que SI, proveer la siguiente información:

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

Completado por:

Hector Ramos

Nombre Representante de la Empresa Instaladora


Firma del Representante

10/1/2025

Fecha



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](http://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.

Disclaimer: The PVWatts® Model ("Model") is provided by the National Renewable Energy Laboratory ("NREL"), which is operated by the Alliance for Sustainable Energy, LLC ("Alliance") for the U.S. Department of Energy ("DOE") and may be used for any purpose whatsoever.

The names DOE/NREL/ALLIANCE shall not be used in any representation, advertising, publicity or other manner whatsoever to endorse or promote any entity that adopts or uses the Model. DOE/NREL/ALLIANCE shall not provide any support, consulting, training or assistance of any kind with regard to the use of the Model or any updates, revisions or new versions of the Model.

YOU AGREE TO INDEMNIFY DOE/NREL/ALLIANCE, AND ITS AFFILIATES, OFFICERS, AGENTS, AND EMPLOYEES AGAINST ANY CLAIM OR DEMAND, INCLUDING REASONABLE ATTORNEYS' FEES, RELATED TO YOUR USE, RELIANCE, OR ADOPTION OF THE MODEL FOR ANY PURPOSE WHATSOEVER. THE MODEL IS PROVIDED BY DOE/NREL/ALLIANCE 'AS IS' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. IN NO EVENT SHALL DOE/NREL/ALLIANCE BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO CLAIMS ASSOCIATED WITH THE LOSS OF DATA OR PROFITS, WHICH MAY RESULT FROM ANY ACTION IN CONTRACT, NEGLIGENCE OR OTHER TORTIOUS CLAIM THAT ARISES OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE MODEL.

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

25,934 kWh/Year*

Month	Solar Radiation (kWh/m ² /day)	AC Energy (kWh)
January	5.30	2,201
February	5.86	2,181
March	6.10	2,489
April	5.54	2,158
May	5.16	2,085
June	5.25	2,054
July	5.38	2,178
August	5.47	2,216
September	5.31	2,076
October	5.39	2,176
November	5.05	1,993
December	5.13	2,127
Annual	5.41	25,934

Location and Station Identification

Requested Location	LINEAS VERDES HYDRO INC, CAR 633 CIALES PR 00638
Weather Data Source	Lat, Lng: 18.33, -66.46 0.8 mi
Latitude	18.33° N
Longitude	66.46° W

PV System Specifications

DC System Size	17.37 kW
Module Type	Standard
Array Type	Fixed (open rack)
System Losses	14.08%
Array Tilt	20°
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	Feb	Mar	Apr	May	June
	0%	0%	0%	0%	0%	0%
	July	Aug	Sept	Oct	Nov	Dec
	0%	0%	0%	0%	0%	0%

Performance Metrics

DC Capacity Factor	17.0%
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<https://pvwatts.nrel.gov/pvwatts.php>

Su factura de electricidad

Para el periodo del 18 de julio de 2024 al 17 de agosto de 2024

CAUDALES RIOS,ROLANDO D

Su número de cuenta: 2321990000

Fecha de expedición de esta factura: 17 de agosto de 2024

Ciclo de facturación: 18



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

\$640.85

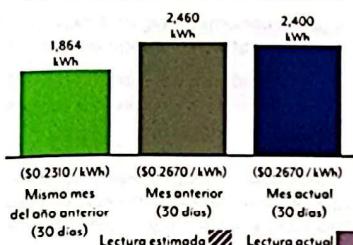
FECHA DE VENCIMIENTO

19 sep 2024

CONSUMO DE kWh

2,400 kWh

SU CONSUMO DE ENERGÍA



COMPARACIÓN

Este mes, usted consumió:



2.4% menos energía
en comparación con el mes anterior



28.8% más energía
en comparación con el año anterior

PROMEDIOS

Costo promedio por día

\$21.36

Promedio de consumo diario

80 kWh

Costo promedio de 12 meses por kWh

\$0.2591

¡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

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



**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: 2321990000
Cantidad adeudada: \$640.85
Fecha de vencimiento:
19 de septiembre de 2024

Cantidad incluida:

CAUDALES RIOS,ROLANDO D
HC 2 BOX 4999
CIALES PR 00638-9899

00023219900001 000064085 000064085 2

¿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 Pública - RFP
- 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

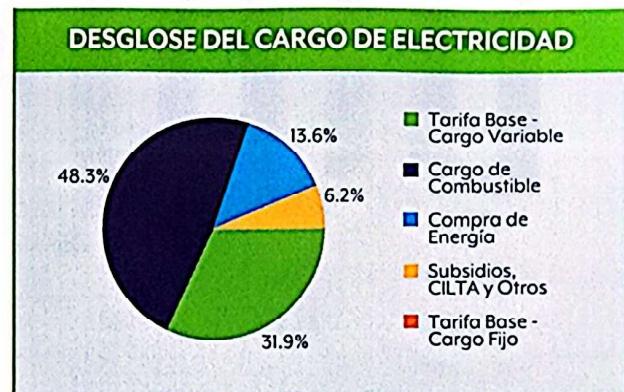
Cuando hace pagos a tiempo, usted mantiene y protege su crédito. Los pagos parciales no evitarán la suspensión del servicio de energía eléctrica si todavía hay pagos en atraso y procede tal suspensión. Las cuentas que sean finales y que no se hayan pagado a tiempo, podrán ser referidas a una agencia 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).



CamScanner

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	\$717.28
Pagos acreditados	-\$717.28
Cargos corrientes	\$640.85
Cantidad Total Adeudada	\$640.85



Depósito(s) o bono(s) recibido(s): \$116.00

INFORMACIÓN DEL MEDIDOR Y DEL SERVICIO

Dirección del servicio: B-2 CAR 149 R-633 KI.3 HATO VIEJO CAMPAMENTO-LA GRAMA CIALES PR 00638

ID localidad: 2321990295

Tarifa: Servicio Comercial General a

Periodo: 18-jul-2024 a 17-ago-2024

Próxima lectura: 18-sep

Distribución Secundaria

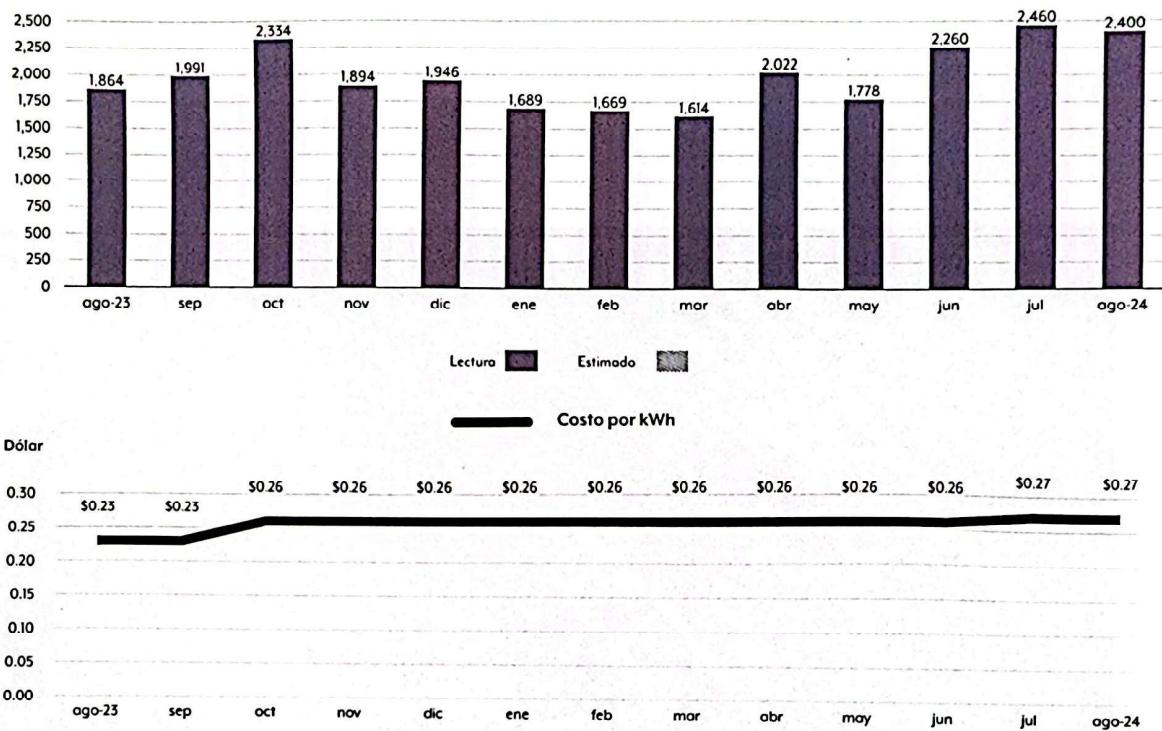
Número de contador	Fecha de lectura	Lectura actual	Fecha de lectura anterior	Lectura anterior	Consumo		Constante
					kWh	Días	
15110159	17-ago	63161.00 L	18-jul	60761.00	2,400.00	30	1

DETALLE DE LOS CARGOS CORRIENTES

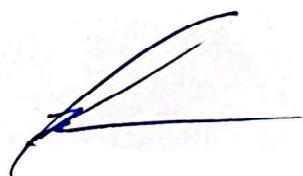
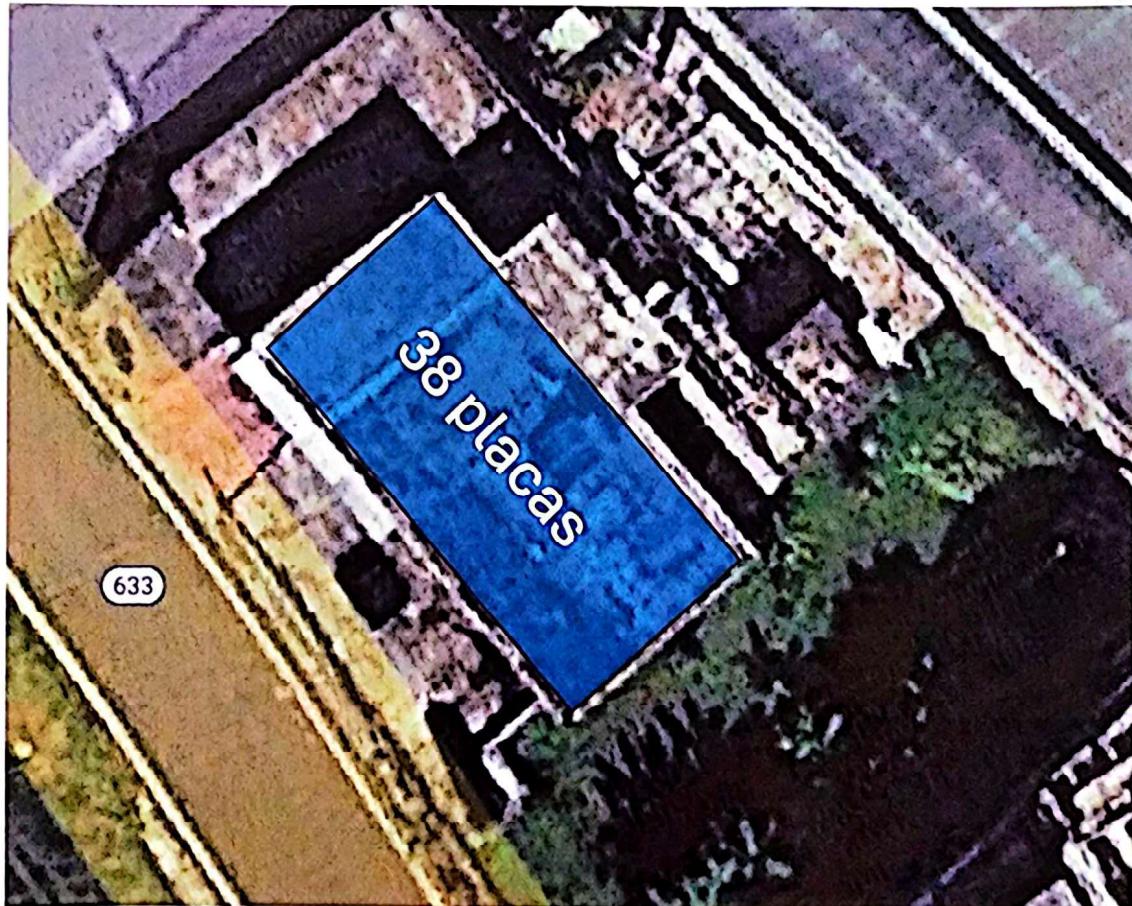
DESCRIPCIÓN	TARIFA	CARGO
Cargos por Servicio		\$5.00
Cargo por Cliente		\$202.78
Cargo por Consumo	2,400 kWh x \$0.08449	\$207.78
Subtotal		
Cláusulas de Reconciliación		
Cláusula FCA-Ajuste Cargo de Combustible	2,400 kWh x \$0.128051	\$307.32
Cláusula PPCA-Ajuste por Compra de Energía	2,400 kWh x \$0.036023	\$86.46
Cláusula CILTA-CELI (Municipios)	2,400 kWh x \$0.003755	\$9.01
Cláusula SUBA-Subsidios HH	2,400 kWh x \$0.010847	\$26.03
Cláusula SUBA-Subsidios NHH	2,400 kWh x \$0.000916	\$2.20
Cláusula EE-Cargo Eficiencia Energética	2,400 kWh x \$0.000853	\$2.05
Subtotal		\$433.07
Total		\$640.85

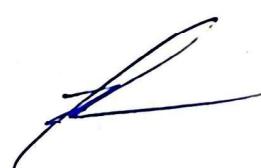
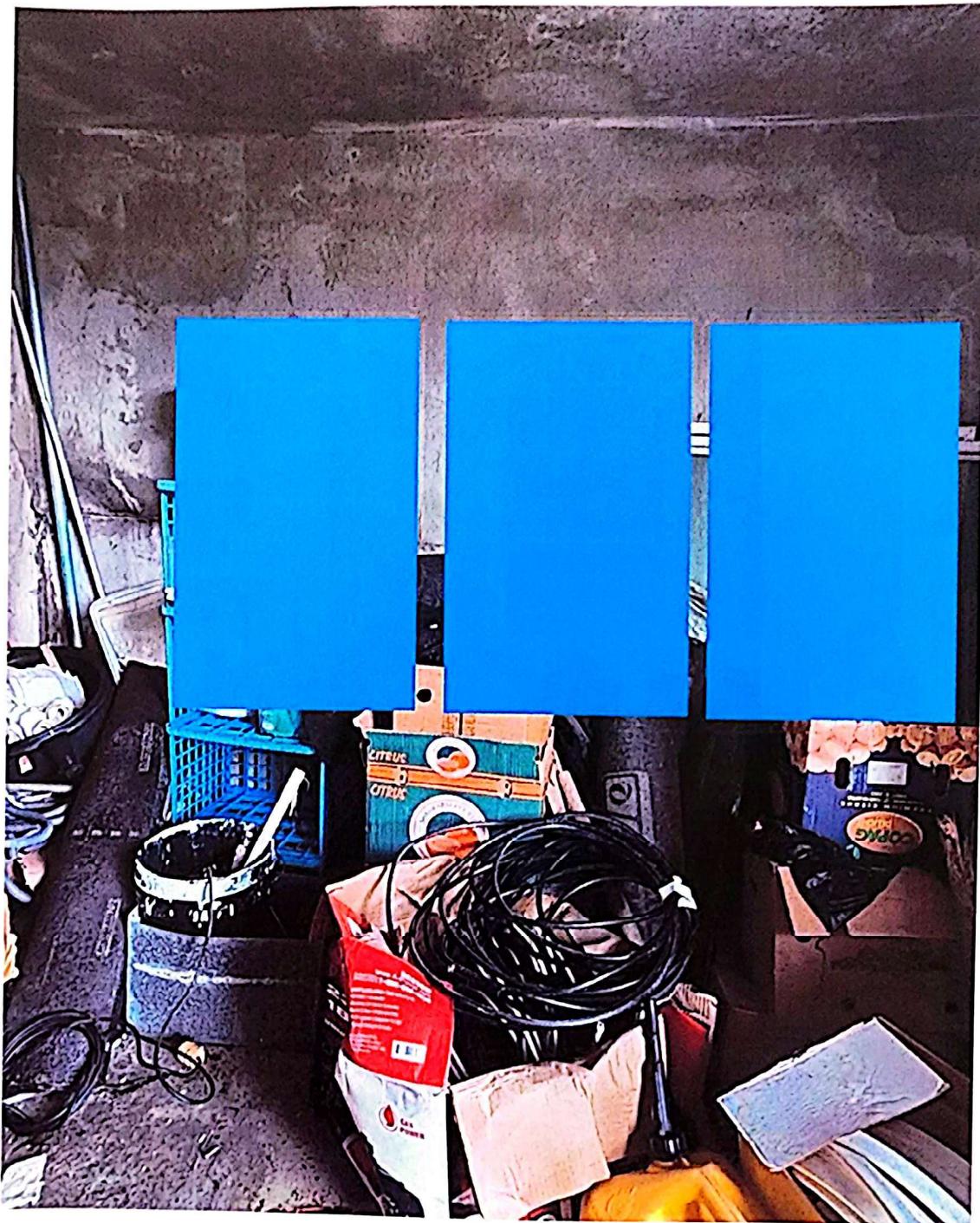
HISTORIAL DE CONSUMO (KWH)

ID localidad: 2321990295



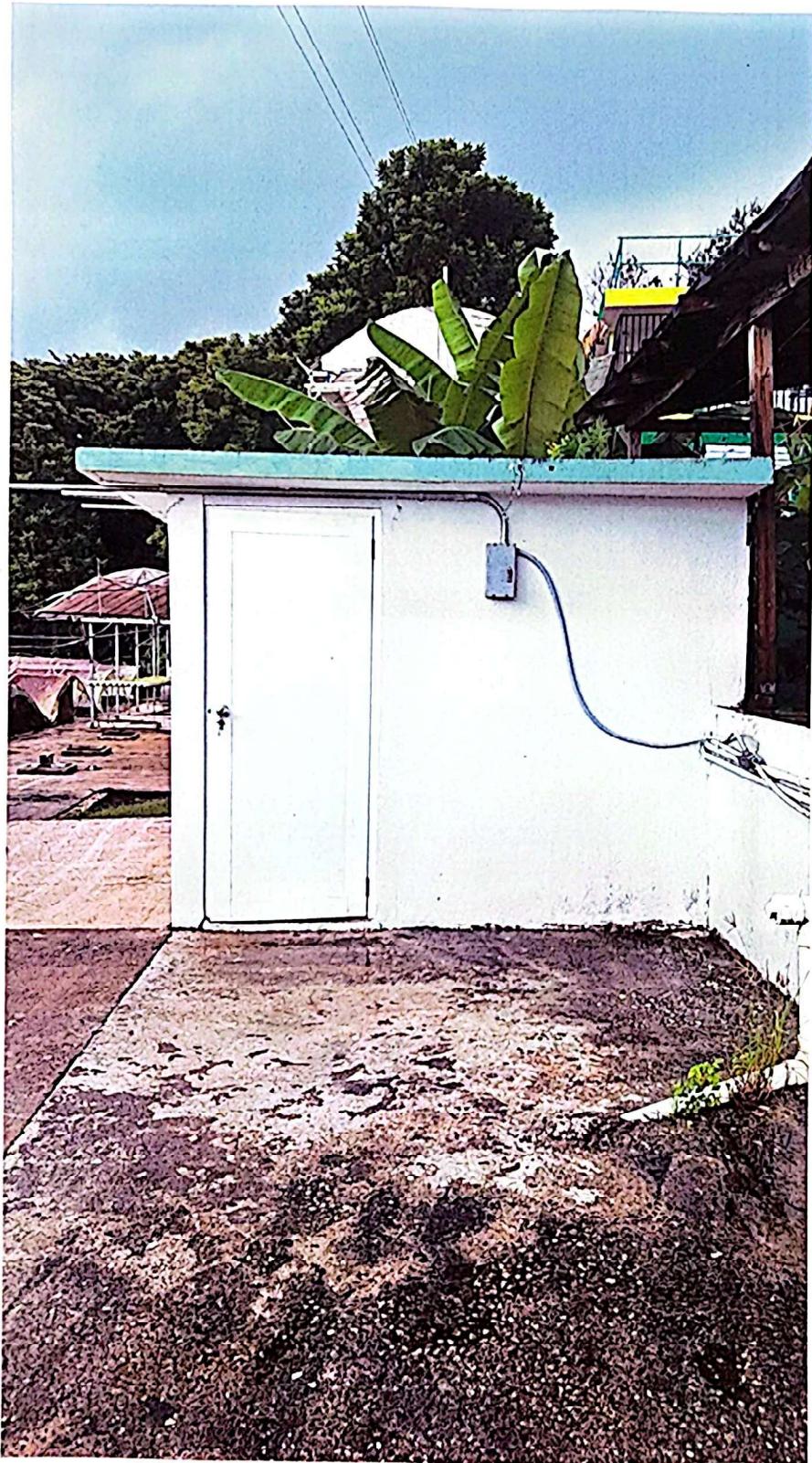
Rolando Caudales Ruiz
Líneas Verdes Hidro Inc
18.361282, -66.465005

A handwritten signature in black ink, appearing to read "Rolando Caudales Ruiz".

A handwritten signature in blue ink, appearing to read 'Kiran' or a similar name.

A handwritten signature in black ink, appearing to be in cursive script, is positioned in the lower right corner of the image.





A blue ink signature or mark, possibly a personal or professional identifier.

35

