U.S. Department of Housing and Urban Development
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Washington, DC 20410
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Environmental Review for Activity/Project that is Categorically Excluded Subject to Section 58.5

Pursuant to 24 CFR 58.35(a)

Project Information

Project Name: Rehabilitación de la Infraestructura del Centro Urbano (PR-CRP-000845)

Responsible Entity: Puerto Rico Department of Housing (PRDOH)

Grant Recipient (if different than Responsible Entity): Municipality of Cabo Rojo

State/Local Identifier: PR-CRP-000845

Preparer: Cliff Jarman, Senior Environmental Scientist, Tetra Tech Inc. and Annette M. Fernandez Rosario, PE, PA, IPV, LEED AP, NGBS Green Verifier Environmental Consultant

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Consultant (if applicable): AVA Environmental Consultants, Inc.

Direct Comments to: PRDOH at environmentcdbg@vivienda.pr.gov

Project Location:
Project Center Coordinates: (18.087449, -67.146229)
Project encompasses several streets and one small plaza near the project center.
Plaza's cadaster Number: 332-016-025-21 (western plaza). Municipality of Cabo Rojo

Description of the Proposed Project [24 CFR 50.21 & 58.32]**:**
The Municipality of Cabo Rojo proposes the revitalization of approximately 6.39 km streets, sidewalks, lighting, and other infrastructure within the traditional urban center of Cabo Rojo excluding the area around Ramón E. Betances Main Square (Figure 1: Location Map). The following streets will be impacted as part of the project:

Municipal Streets - Cabo Rojo		
Streets	**Coordinates**	**Length (m)**
1 Calle Jose de Diego	(18.089571, -67.146739)	322.72
2 Calle Henna	(18.089235, -67.148024)	330.80
3 Calle Pueblo Nuevo (Multiple Streets)	(18.087753, -67.150734)	277.00
4 Calle Angel Franco	(18.087046, -67.148151)	243.35
5 Calle Labra	(18.087830, -67.148010)	107.23
6 Calle Salvador Brau (PR103)	(18.087683, -67.147031)	396.00
7 Calle de Hostos	(18.088873, -67.147977)	338.30
8 Calle Gen Antonio Maceo	(18.088067, -67.145460)	196.10
9 Calle Maximo Gomez	(18.088678, -67.144933)	452.41
10 Calle Salvador Mestre	(18.085995, -67.144569)	279.43
11 Calle Baldorioty de Castro	(18.086369, -67.148048)	589.16
12 Calle Betances	(18.085925, -67.146937)	314.43
13 Calle Mariano Quinones	(18.085340, -67.146855)	268.15
14 Calle Jimenez	(18.084982, -67.146436)	224.22
15 Calle Manuel F. Rossy	(18.084643, -67.146811)	219.48
16 Calle Ruis Belvis	(18.087122, -67.148396)	411.70
17 Calle Barbosa	(18.090351, -67.146834)	495.61
18 Calle Munoz Rivera	(18.089607, -67.145692)	546.17
19 Calle Rios Rivera	(18.087383, -67.148347)	419.89
20 Zoilo Santiago	(18.088210, -67.145552)	28.00

The scope of work includes:

- Rehabilitation of damaged street surfaces using materials equal or similar to existing. An evaluation of subsoil conditions should be carried out, if applicable.
- Rehabilitation of damaged sidewalk and curb areas, including repair or replacement of existing cobblestones or brick details with equal or similar materials.
- Replacement, repair, or rehabilitation of street light fixtures, poles, and bases. This includes evaluating functionality, replacing damaged poles, installing missing posts, installation of signage and pavement marks, and painting, if necessary.
- Installation of two emblematic signs, one at each end of Calle Pedro Albizu as one enters the urban center. An emblematic sign will be installed in a plaza located on Pedro Albizu Campos Street on the western part of the Site. Works required for said installation include demolition of an existing planter, excavation for new footings (18” deep), installation of topsoil and grass around the sign and pressure washing of the Plaza.
- Addressing barriers affecting circulation for people with disabilities via ADA improvements, signage, and finishes and removal of material and architectural barriers that restrict the mobility of and accessibility to elderly and persons with disabilities.

Works will not be performed on sidewalks on bridges (Appendix G Project Drawings).

Ground Disturbance activities associated with the project will include excavations of 6 in to 12 in to remove concrete and/or asphalt in the affected areas. The proposed construction activities include:

- Milling and demolition of damaged asphalt street surfaces to a depth of 2 to 4 inches.
- Selective demolition and replacement of damaged sidewalks and curbs, involving excavation up to 6 inches deep.
- Installation of new street lighting pole foundations, requiring excavation up to 3 feet deep and 2 feet wide.
- Installation of wayfinding signage footers, requiring excavation of narrow holes up to 2 feet deep.
- Trenching for new wiring with trenches estimated to be 3 feet deep and 2 feet wide.
- Sidewalk and curb ramp repair involving subsurface excavation up to 6 inches deep.
- Utility structure repairs like manholes requiring excavation up to 4 feet deep and 4 feet wide.
- The existing subgrade should be removed to such depth that the new Portland Cement Concrete and new aggregate base course maintain the existing finished grade and slopes of the existing pavement. This will increase the depth of excavation indicated above.

The project area will be limited to the existing right of way. The staging area for the construction equipment and materials will be located at a parcel located at the intersection of PR-103 and Manuel F. Rossi Street. A Maintenance of Traffic Plan (MOT) will be implemented, and temporary control devices will be used to control vehicular traffic and provide a safe route to pedestrians during the construction phase of the project. The MOT will be prepared in compliance with PRHTA and FHWA standards and regulations.

During the demolition and construction process, erosion and sedimentation control measures will be implemented to avoid sediment discharges into the storm sewer system. Controls to be installed include hay bales (or silt socks) on drainage structures, silt fence around the project limit, and implementation of a stabilized entrance, with truck washout station to avoid sediments track out into the streets. Staging and storage areas for construction materials will be protected with silt fence, or any other measure as needed.

Level of Environmental Review Determination:
Categorically Excluded Activities Subject to 58.5 (CEST per 24 CFR 58.35(a)) – 58.35(a) (1). Acquisition, repair, improvement, reconstruction, or rehabilitation of public facilities and improvements (other than buildings) when the facilities and improvements are in place and will be retained in the same use without change in size or capacity of more than 20 percent (e.g., replacement of water or sewer lines, reconstruction of curbs and sidewalks, repaving of streets) This conclusion assumes that the sidewalks are part of the streets right of way.

Funding Information

Grant Number	HUD Program	Funding Amount
B-17-DM-72-0001; B-18-DP-72-0001; B-19-DP-78-0002; B-18-DE-72-0001	Community Development Block Grant – Disaster Recovery (CDBG-DR)	$11,938,162,230

Estimated Total HUD Funded Amount: $3,531,269.94

Estimated Total Project Cost (HUD and non-HUD funds) [24 CFR 58.32(d)]**:** $3,531,269.94

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

Record below the compliance or conformance determinations for each statute, executive order, or regulation. Provide credible, traceable, and supportive source documentation for each authority. Where applicable, complete the necessary reviews or consultations and obtain or note applicable permits of approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

Compliance Factors: Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5 and §58.6	Are formal compliance steps or mitigation required?	Compliance determinations
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.6		
Airport Hazards 24 CFR Part 51 Subpart D	Yes ☐ No ☒	The project site is not within 15,000 feet of a military airport or 2,500 feet of a civilian airport. The nearest airport is Eugenio Maria de Hostos Airport, approximately 11.81 miles (62,357 feet) to the north of the Site. The nearest military airport is Luis Munoz Marin Airport, located approximately 77.50 miles (409,200 feet) to the northeast of the site. That means it is not located within a Runway Potential Zone/Clear Zone (RPZ/CZ) or Accident Potential Zone (APZ). See Appendix A; Exhibit 1: Airport Hazards – Civilian Airport and Exhibit 1a: Airport Hazards - Military Airport
Coastal Barrier Resources	Yes ☐ No ☒	The project location is outside the coastal zone limits and/or is not expected to affect natural resources, land uses, or water uses in the Puerto

Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]		Rico coastal zone. The Project is not located in a CBRS unit. The closest CBRS Unit is PR-69 Punta Carenero, located approximately 2.26 miles (11,933 feet) west of the project. Therefore, this project has no potential to impact a CBRS Unit and is in compliance with the Coastal Barrier Resources Act. There are no anticipated adverse effects due to the project's development. See Appendix A: Exhibit 2 CBRS
Flood Insurance Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]	Yes ☐ No ☒	Most of the selected Site is located on a floodplain. According to FEMA Panel ID 72000C1535J, effective date November 18, 2009, the parcel where the project will be located stands within three zones, namely, Zone X (areas determined to be outside the 500-year flood by FEMA), Zone X (shaded) (areas of 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile, usually depicted on FIRMs as above the 500-year flood level), and Floodway. Flood insurance is not required for infrastructure projects; however, all Municipalities of Puerto Rico participate in the National Flood Insurance Program and are currently in good standing with the agency. See Appendix A: Exhibits 3, 3a, and 3b
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5		
Clean Air Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93	Yes ☐ No ☒	The project location is not currently listed as a nonattainment area. During construction, the contractor must implement measures to prevent dust from becoming a nuisance to neighboring areas. See Appendix A: Exhibit 4 and Appendix B: Puerto Rico Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants
Coastal Zone Management Coastal Zone Management Act, sections 307(c) & (d)	Yes ☐ No ☒	The project is located outside the area identified as Coastal Zone Line Boundary. The closest Coastal Zone Line Boundary is located approximately 0.14 miles (739 feet) west of the project.

		There are no anticipated adverse effects to said area due to the project's development. The project is in compliance with the Coastal Zone Management Act. See Appendix A: Exhibit 5 Coastal Zone Land Boundary
Contamination and Toxic Substances 24 CFR Part 50.3(i) & 58.5(i)(2)	Yes ☒ No ☐	The project area only includes existing streets, sidewalks, curbs, lighting, and two signs. There are no USTs within the streets. There are no signs of distressed vegetation in the streets or stained soil. See Appendix H Site Photos. Site surveys were conducted for lead based paint (LBP) and asbestos containing materials (ACM). LBP was not identified above the regulatory level of 1.0 mg/cm2 in the Site. An ACM survey was conducted on November 26, 2024. No ACM were identified in the survey. (See Appendix C: LBP report and ACM report) The NEPAssist database was reviewed to identify EPA Facilities within 3,000 ft of Site. (See Appendix A: Exhibit 6 NEPAssist Radius Map and Exhibit 6a JP GIS UST Map) The following EPA facilities were detected as of date of review: • One (1) Superfund Site • Three (3) Toxic Release Sites • Three (3) Water Dischargers Sites (NPDES) • Ten (10) Hazardous Waste (RCRA) • Two (2) Air Emission Sites Additional information obtained from the EDR Radius Report and DNER 2020 LUST lists: • Ten (10) Federal CERCLIS NFRAP Site List (active) • One (1 Active Leaking Underground Storage Tanks (LUSTs) • Four (4) LUSTs The Field Inspection Report conducted by AVA Environmental Consultants representatives indicates, that as of July 14, 2023, there are eight (8) facilities that could represent an environmental concern for the Site and should be further examined. As indicated in the Report, the Project is located in a Superfund, specifically, the area identified as Plume 1 of the Cabo Rojo

		Groundwater Contamination Site. According to the information provided, the sidewalks in front of the two sites identified as sources of contamination (CRPDC and EQP) will be impacted. There would be excavation work on the contaminated area; thus, they could represent an environmental concern. Six (6) of the NFRAP sites could represent an environmental concern as well as the LUST. (See Appendix C: Contaminated Site Information.) According to the information available per the date of the Report, the TRI, NPDES, RCRA and Air Emission facilities located in a 3,000 ft radius, do not appear to present an environmental concern for the Site with regard to TRI (since last report), NPDES (as of 12/31/2022), RCRA (as of 6/24/23), Air Emissions (as of 6/17/2023 and 6/24/2023) as they had no significant noncompliance or high priority violation as of the dates indicated before. Exhibit 6a includes detailed information regarding facilities identified. Per CPD-23-103 (Departmental Policy for Addressing Radon in the Environmental Review Process), exemptions from having to consider radon in the contamination analysis include projects involving non-residential buildings that will not be occupied for more than 4 hours a day. The project involves the works on streets therefore radon should not be a concern. See Appendix A: Exhibit 6 NEPAssist Radius Map and Exhibit 6a JP GIS UST Map; and Appendix C for LBP report, ACM report, and Contamination and Toxic Substances Information.
Endangered Species Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402	Yes ☒ No ☐	The proposed project is located in a densely populated, urban landscape. The site is not identified as a critical habitat by the US Fish and Wildlife Services (USFWS). However, the Endangered Species List Report indicated that one specie, the Puerto Rican Boa, whose habitat has been designated *wherever found* could be found at the Site. Species on this report will be considered in the analysis and design of the project.

		The project conforms to Project Criteria No. 1 and No. 2: *Street resurfacing; and Construction of gutters and sidewalks along existing roads,* of the Blanket Clearance Letter for Federally sponsored projects, Housing and Urban Development dated January 14, 2013. USFWS Concurred with the determination on August 25, 2023, and later on February 8, 2024. The project is in compliance with the Endangered Species Act. See Appendix A; Exhibit 7a and 7b: Appendix D Endangered Species.
Explosive and Flammable Hazards 24 CFR Part 51 Subpart C	Yes ☐ No ☒	Not Applicable. Project does not include a hazardous facility or the development, construction, rehabilitation that will increase residential densities, or conversion. The project is in compliance with 24 CFR Part 51 Subpart C.
Farmlands Protection Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658	Yes ☐ No ☒	The soils in the project area are described by the Natural Resources Conservation Services (NRCS) as Ua, Urban Land. The NRCS has determined that this soil in classifies as "not prime farmland." Furthermore, this project does not include any activities that could potentially convert agricultural land to non-agricultural use. The project is in compliance with the Regulation. See Appendix A: Exhibit 8: Farmlands
Floodplain Management Executive Order 11988, particularly section 2(a); 24 CFR Part 55	Yes ☒ No ☐	The proposed activity with dimensions of 72.81 acres is situated in combined floodplain zones, 8.65 acres in floodway, 55.99 acres within the floodplain and, 8.17 acres outside the floodplain as shown in FEMA's Advisory Baseline Flood Elevations Map, effective date April 13, 2018. The site is adjacent to a riverine wetland as shown in the NWI Wetland Mapper. The extent of the project in the floodway includes a series of narrow two-lane streets and associated infrastructure within the traditional urban center of Cabo Rojo.

		The PRDOH Permits and Environmental Compliance Division, in a Memorandum dated April 24, 2024, indicated that the project is eligible for the following exception for activities in the floodway: 55.12(i): Special projects directed to the removal of material and architectural barriers that restrict the mobility of and accessibility to elderly and persons with disabilities. After evaluation, it was concluded that the Exemptions §55.14 (e) for floodplain management applies to the project, according to the HUD-provided guidance to navigate the stipulations of the updated 24 Part 55 rule, a review of the new rule, and the Federal Register. As such, a 5-step process will suffice for the project to comply with the regulation. A 5-Step Analysis was conducted which concluded that the floodplain values will be preserved since the project will be executed within the existing right of way of the streets and sidewalks, and there will be no changes to the current Site stormwater management conditions. This will avoid further impermeabilization within the floodplain, thus preserving it as it currently is. The proposed project is compliant with this regulation. See Appendix A: Exhibits 3a and 3b; and Appendix D: 5-Step Decision-Making Process.
Historic Preservation National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800	Yes ☒ No ☐	The site was evaluated on September 9 and December 28, 2023; and April 24, June 12, and July 2, 2025, by an SOI Qualified Architect/Architectural Historian and by an SOI Qualified Archaeologist on August 31 and December 22, 2023, and February 5, February 28, March 21, April 16, May 24, June 12, and July 10, 2024. On August 28, 2024, SHPO concurred with the finding of No Historic Properties Affected within the project's Area of Potential Effects on the condition that archaeological monitoring be conducted. On March 17, 2025, SHPO deemed acceptable the Archeological Monitoring Plan, detailing the archaeological monitoring to take place during ground disturbing activities for the project.

		The Project is in compliance with the Act, subject to implementation of Mitigation Measures. See Appendix F: SHPO Concurrence and 106 NHPA Effect Determination and Archeological Monitoring Plan
Noise Abatement and Control Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B	Yes ☐ No ☒	Not Applicable. Project does not include new construction for residential use or rehabilitation of an existing residential property. The project is in compliance with the Noise control Act of 1972, as amended.
Sole Source Aquifers Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149	Yes ☐ No ☒	Puerto Rico is included in Region II of the USA EPA designated sole-source aquifer regions. There are no sole source aquifers in Puerto Rico. Hence, the project is not served by designated sole source aquifers nor is it located within a sole source aquifer watershed. The closest SSA is Biscayne Aquifer in the state of Florida, approximately 982 mi (5,184,960 feet) to the northwest. The Project is in compliance with the Act. See Appendix A; Exhibit 9: Sole Source Aquifers
Wetlands Protection Executive Order 11990, particularly sections 2 and 5	Yes ☒ No ☐	There are areas within the Site which have already been developed that are identified as wetlands on the USFWS National Wetland Inventory website. Two, identified as R2UBHx Riverine and R5UBH Riverine, are located to the northwest of the Site, mapped besides the Las Tunas Creek that runs south to north between No. 1 St. (Puerto Nuevo Area) and Dr. Angel Franco St. A 5-step analysis was completed assessing the impacts to wetlands. (See Appendix E.) Works will be performed in the streets near but not on the creek, however the map depicts the wetland adjacent to the creek on top of the existing structures. Another wetland, identified as PFO3A, Freshwater Forested/Shrub Wetland, is mapped to the southwest of PR-103 along the area where the Las Tunas creek runs. The staging area for the project is located on the Public Car Terminal, part of which is indicated to be in said wetland. There is also a bridge on the Jose de Diego St. that crosses Las Piletas Creek that is channelized to the south and continues to the north of the bridge, which is

		identified as R2UBHx Riverine. These wetlands, associated with the formerly mentioned creeks and identified in adjacent developed areas, will not be directly impacted by the proposed action, mainly because it is marked over areas that have been developed and all activities will occur on streets and sidewalks adjacent to it. As such, there will be no direct action within the wetland. As part of the project there will be no direct impact on on-site wetlands since there are none in the previously disturbed areas of the site. Potential impact to on-site or off-site wetlands may be addressed with best management practices, as stated by §55.10 (Limitations on HUD assistance in wetlands). Moreover, no new occupancy or modification of the wetland area will take place since this project consists of an existing developed area that is currently in use as defined in Executive Order 11990. Refer to Appendix A Exhibit 10 for Wetlands Map. Refer to Appendix E for the 5-step Decision-Making Process for this project. Therefore,the project is in compliance with the Executive Order 11990 for Wetlands Protection.
Wild and Scenic Rivers Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)	Yes ☐ No ☒	Puerto Rico has approximately 5,385 river miles. Only 8.9 miles of three rivers are designated as wild & scenic. There are no surrounding rivers that qualify as wild and scenic rivers. The closest wild and scenic river (Rio Icacos) is in the Yunque Rainforest, approximately 89 miles (469,920 feet) east of the project site. The project poses no harm to this river. The Project is in compliance with the Act. See Appendix A: Exhibit 11: Wild and Scenic Rivers

Field Inspection (Date and completed by)**:** A field inspection was conducted by AVA Environmental Consultants representatives on July 14, 2023 with the intent of evaluating environmental aspects pursuant to 24CFR58 regulation, relevant regulatory environmental risks were not identified. Oil stains in asphalted streets were observed, but we understand these to be de minimis conditions. Registers that may correspond to groundwater monitoring wells were observed within the project area, which is located a Superfund Site. Several electrical transformers were also noted; while most appear to be in good condition, it is unknown whether they contain PCBs. These two observations represent potential data gaps.

Recognized Environmental Condition (RECs) were identified within the project site. As of the date of the Report (August 2023), available information at that time indicated there are eight (8) facilities that could represent environmental concern for the Site and should be further examined. As indicated in the Report included in Exhibit 6a of the Environmental Review Record (ERR) statutory form, the Project is located in a Superfund, specifically, the area identified as Plume 1 of the Cabo Rojo Groundwater Contamination Site. According to the information provided, the sidewalks in front of the two sites identified as sources of contamination Cabo Rojo Professional Dry Cleaners (CRPDC) and Extasy Q Prints (EQP) will be affected. There would be excavation work in the contaminated area; thus, they could represent environmental concerns. Six (6) of the CERCLA No Further Remedial Action Planned (NFRAP) sites identified could represent an environmental concern as well as the Leaking Underground Storage Tank (LUST) noted. Information included as part of the Report should not be construed to be that of a Phase 1 Environmental Assessment, as all the elements required by the ASTM Standard E1527-21 where not analyzed in conjunction.

Detailed information regarding the above-mentioned findings is summarized in the ERR statutory form. The findings presented in the field inspection report and in Exhibit 6a of the ERR reflect conditions observed during the inspection conducted in July 2023 and information gathered through the EPA databases as of August 2023.

Summary of Findings and Conclusions: The proposed project consists of the revitalization of streets, sidewalks and curbs within Old Town Cabo Rojo. The project complies with the statutes, executive orders, and regulations evaluated as part of this assessment including the following aspects:

- Contamination and Toxic Substances - Available information indicates there are eight
  (8) facilities that could represent an environmental concern for the Site. Further evaluation was warranted to assess if it would affect the project.

- Endangered Species - If a Puerto ‘Rican boa is found in the project action Sit, work shall cease until the Boa moves on its own. If the Boa does not move of, the Puerto Rico Department of Natural and Environmental Resources shall be contacted and asked to relocate the Boa in accordance with the USFWS Puerto Rican Boa Conservation Guidelines and the January 2024 Amended Programmatic Biological Opinion.

- Floodplains – A 5-Step Analysis was conducted which concluded that the floodplain values will be preserved since the project will be executed within the existing right of way of the streets and sidewalks, and there will be no changes to the current Site stormwater management conditions.

- Contamination and Toxic Substances - Available information indicates there are eight (8) facilities that could represent an environmental concern for the Site. Further evaluation was warranted to assess if it would affect the project.

- Endangered Species - If a Puerto ‘Rican boa is found in the project action Sit, work shall cease until the Boa moves on its own. If the Boa does not move of, the Puerto Rico Department of Natural and Environmental Resources shall be contacted and asked to relocate the Boa in accordance with the USFWS Puerto Rican Boa Conservation Guidelines and the January 2024 Amended Programmatic Biological Opinion.

- Floodplains – A 5-Step Analysis was conducted which concluded that the floodplain values will be preserved since the project will be executed within the existing right of way of the streets and sidewalks, and there will be no changes to the current Site stormwater management conditions.

- Historic Preservation - It would be necessary to conduct archaeological monitoring during ground disturbing activities for the project. The approved archaeological monitoring work plan must be followed.

- Wetlands – A 5-Step Analysis was conducted which concluded that the impacts to wetlands would be avoided.

- Erosion Control and Sedimentation - Stormwater pollution prevention measures shall be implemented throughout the construction period, until final stabilization of the Site is achieved. These measures include best management practices from the following categories: • Material storage and spill cleanup, • Earth-moving activities and erosion control, • Roadwork and pavement construction, • Vehicle and equipment maintenance, • Paints, solvents, and adhesives, • Concrete, cement, and mortars, and • Waste disposal.

- Federal and Local regulations will be followed, permits will be obtained, and the required compliance inspections will be performed.

The proposed project is not expected to negatively impact the area, as it is being undertaken in a previously developed area and identified impacts can be mitigated.

Mitigation Measures and Conditions

Summarized below are 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	Available information indicates there are eight (8) facilities, one of which is a superfund site, which could represent an environmental concern for the PR-156 and PR-34 Sites. Further evaluation is warranted to assess if it would affect the project.
Endangered Species	If a Puerto 'Rican boa is found in the project action Sit, work shall cease until the Boa moves on its own. If the Boa does not move of, the Puerto Rico Department of Natural and Environmental Resources shall be contacted and asked to relocate the Boa in accordance with the USFWS Puerto Rican Boa Conservation Guidelines and the January 2024 Amended Programmatic Biological
Floodplains	The chosen alternative will preserve floodplain values since it will be performed within the existing right-of-way. This will avoid further impermeabilization within the floodplain, thus preserving it as it currently is.
Historic Preservation	It would be necessary to conduct archaeological monitoring during ground disturbing activities for the project.
Wetlands	Best management practices will be implemented to ensure there are no direct or indirect impacts to wetlands, as stated by §55.10 (Limitations on HUD assistance in wetlands).

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: Sol V Rosa Date: September 16, 2025

Name/Title/Organization: Sol Vanessa Rosa / Environmental Reviewer / TetraTech INC

Responsible Entity Agency Official Signature:

Date: 9/16/2025

Name/Title: Priscilla M. Toro Rivera/Environmental Specialist /PRDOH

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

List of Figures:

Figure 1: Location Map

List of Appendices:

Appendix A: Maps

Appendix B: Puerto Rico Nonattainment/Maintenance Status for All Criteria Pollutants

Appendix C: Contamination and Toxic Substances

Appendix D: Endangered Species

Appendix E: 5-Step Analysis

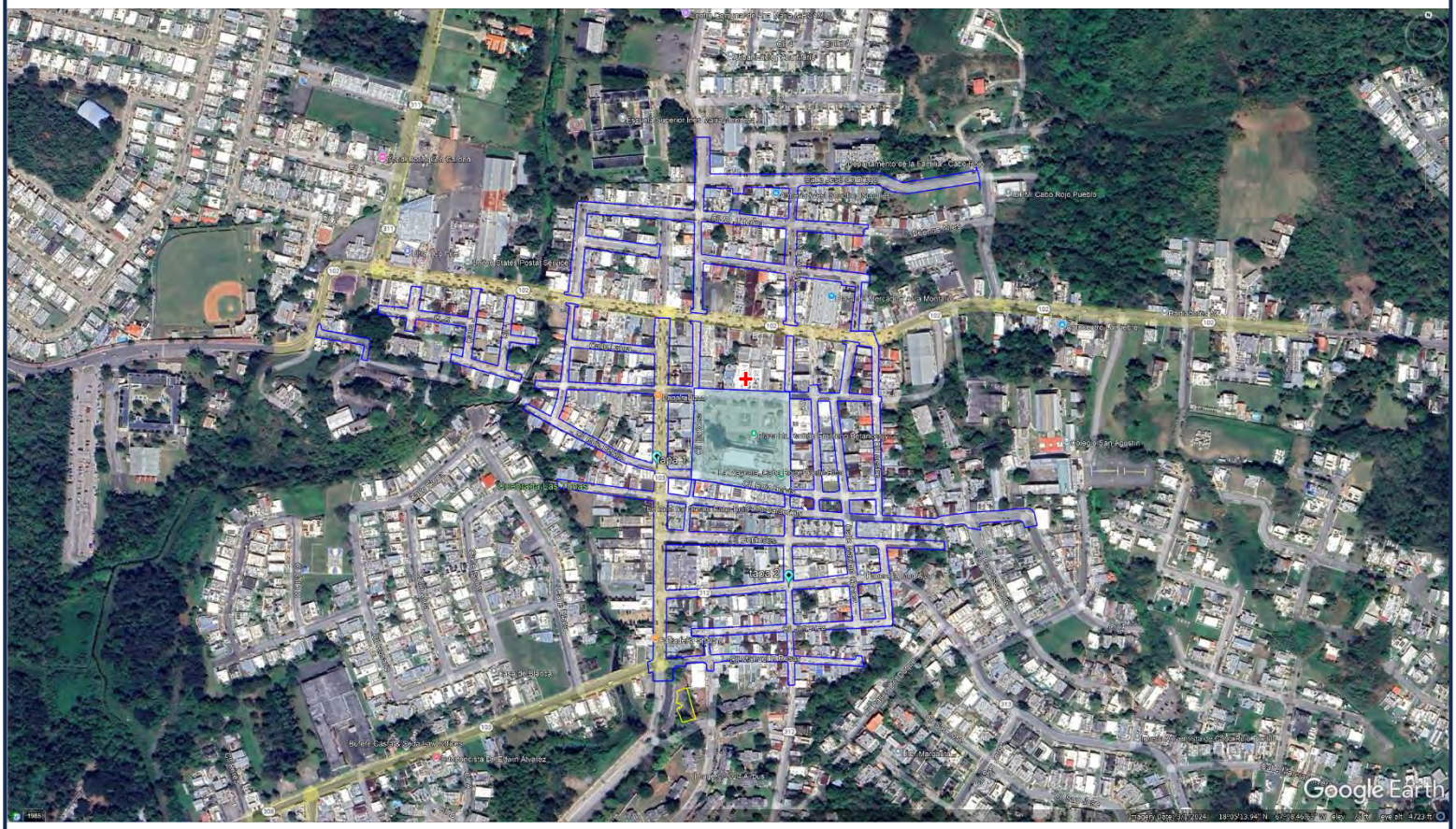
Appendix F: 106 Consultation

Appendix G: Field Inspection Report

Appendix H: Site Photos

Figure 1: Location Map – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229



February 22, 2024

Site

Project Point

Staging Area

N

Spatial Reference: World Geodetic System WGS84 standard

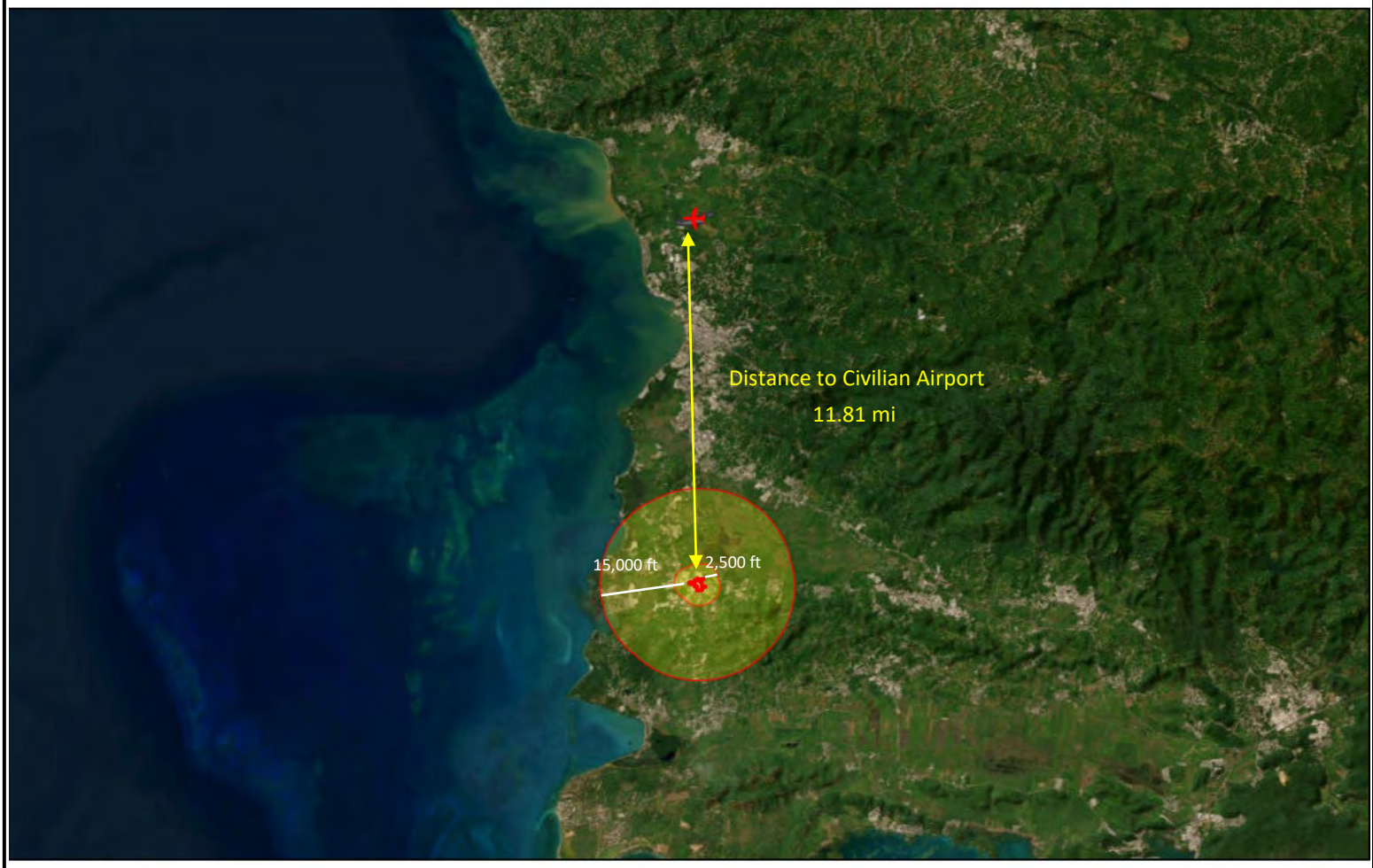
Source: Google Earth

Appendix A

Exhibit 1: Airport Hazards – Civilian Airport - PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229

Letter ANSI A Landscape



March 27, 2024

Buffer graphics
2,500 ft and 15,000 ft

Airport Polygons

Site

Airport Points

1:288,895

N

0 2.25 4.5 9 mi

0 3.75 7.5 15 km

Earthstar Geographics, EPA OEI

Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet
Source: https://nepassisttool.epa.gov/nepassist/nepamap.aspx

Exhibit 1a: Airport Hazards – Military Airport - PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229

Letter ANSI A Landscape

October 2, 2024

Buffer graphics
2,500 ft and 15,000 ft

Airport Polygons

Site

Airport Points

N

1:1,155,581

0 5 10 20 mi

0 15 30 60 km

Earthstar Geographics, EPA OEI

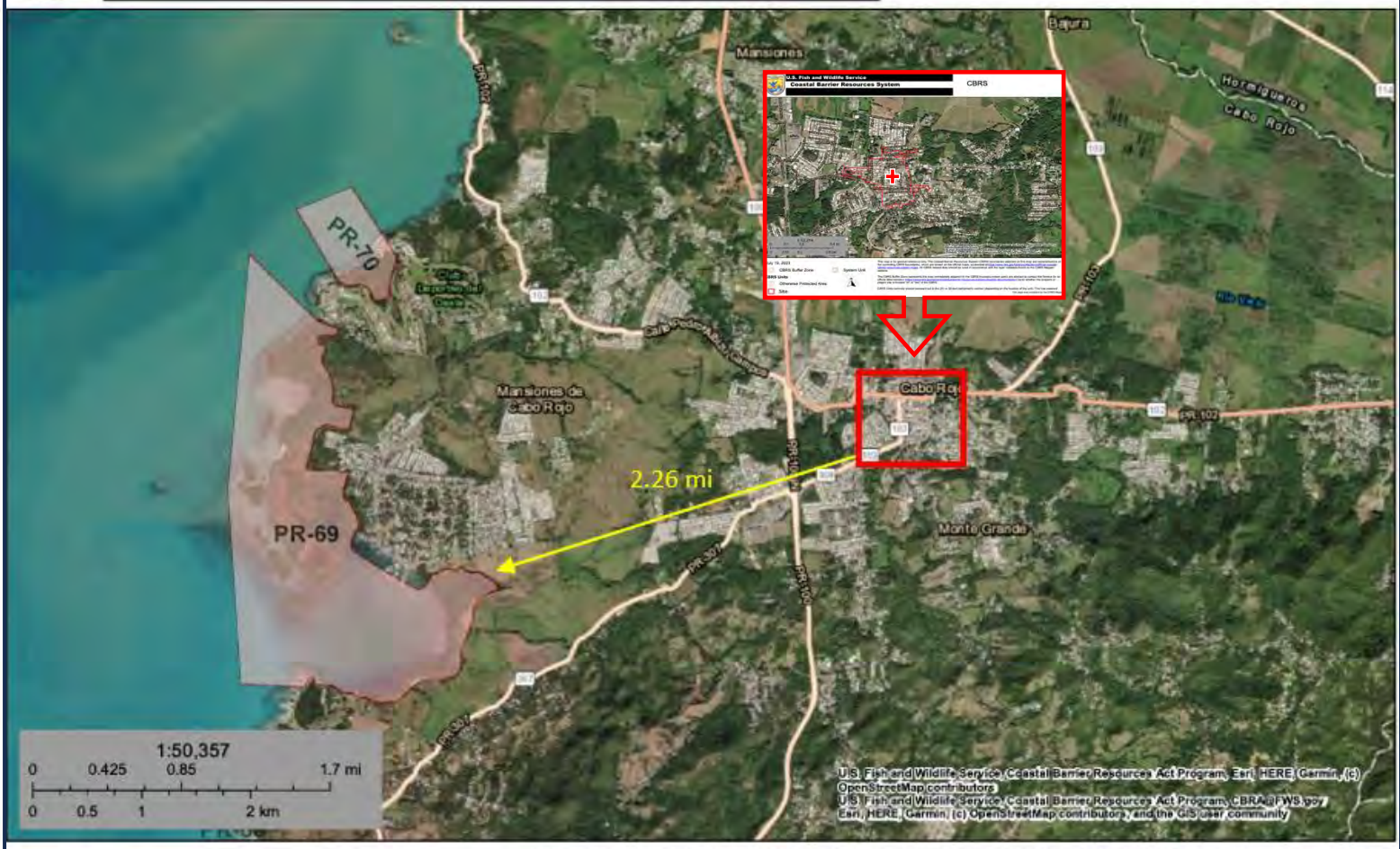
Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source:
https://nepassisttool.epa.gov/nepassist/nepamap.aspx

Exhibit 2: CBRS – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229

U.S. Fish and Wildlife Service
Coastal Barrier Resources System



June 19, 2023

CBRS Buffer Zone

System Unit

CBRS Units

Otherwise Protected Area

Site

\+ Project Point

N

This map is for general reference only. The Coastal Barrier Resources System (CBRS) boundaries depicted on this map are representations of the controlling CBRS boundaries, which are shown on the official maps, accessible at https://www.fws.gov/library/collections/official-coastal-barrier-resources-system-maps. All CBRS related data should be used in accordance with the layer metadata found on the CBRS Mapper website.

The CBRS Buffer Zone represents the area immediately adjacent to the CBRS boundary where users are advised to contact the Service for an official determination (https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation) as to whether the property or project site is located "in" or "out" of the CBRS.

CBRS Units normally extend seaward out to the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward

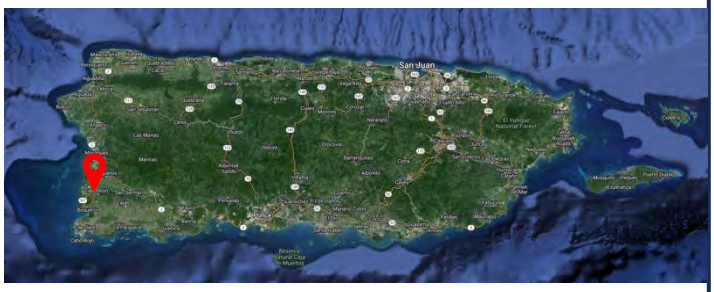
This page was produced by the CBRS Mapper

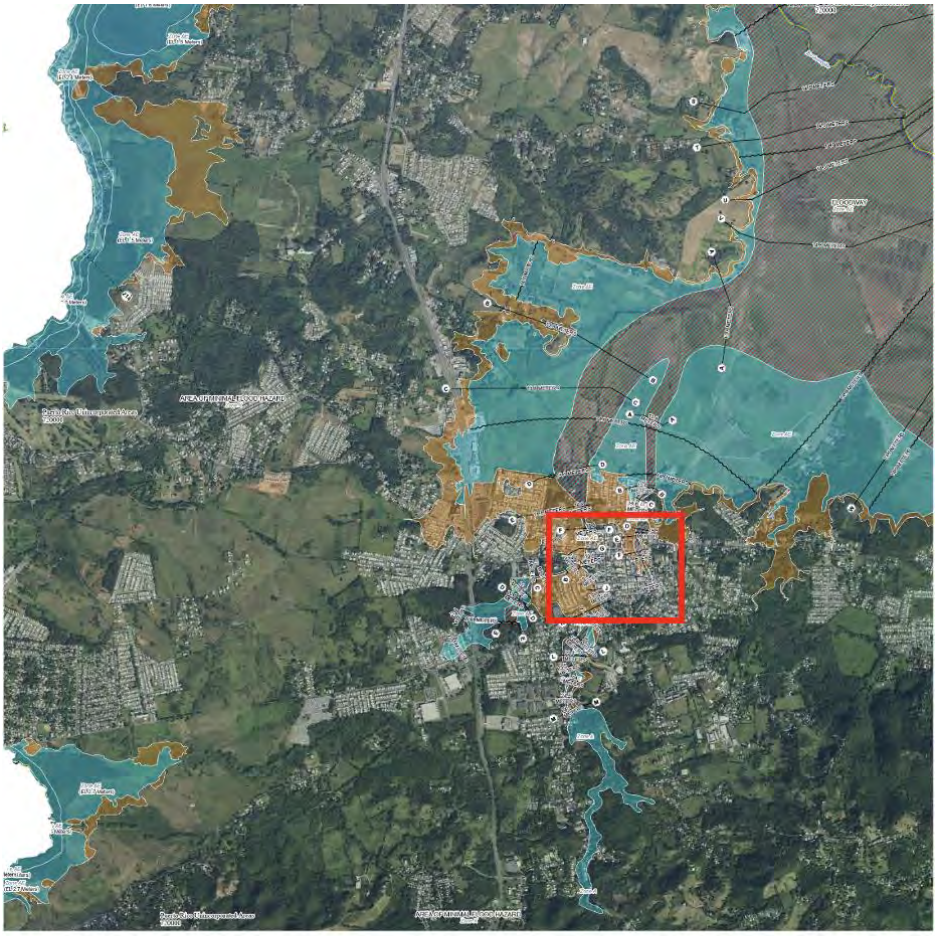
Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

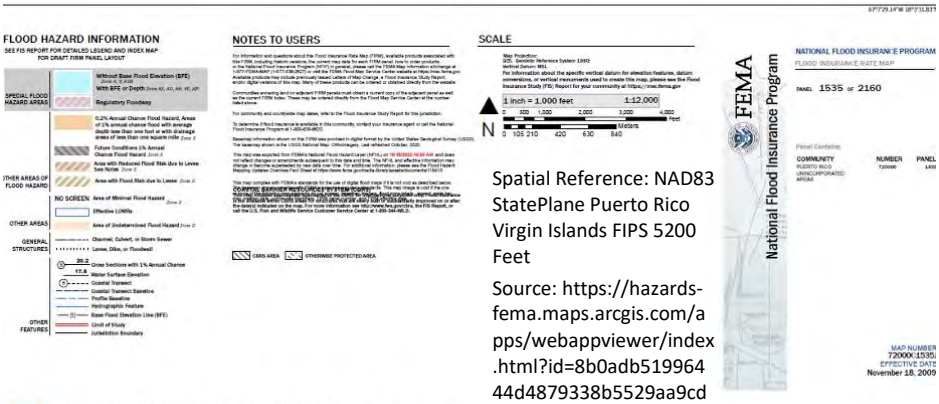
Source: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd

Exhibit 3: FEMA FIRMette – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229







Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd

Project Site - Several Streets in this Area

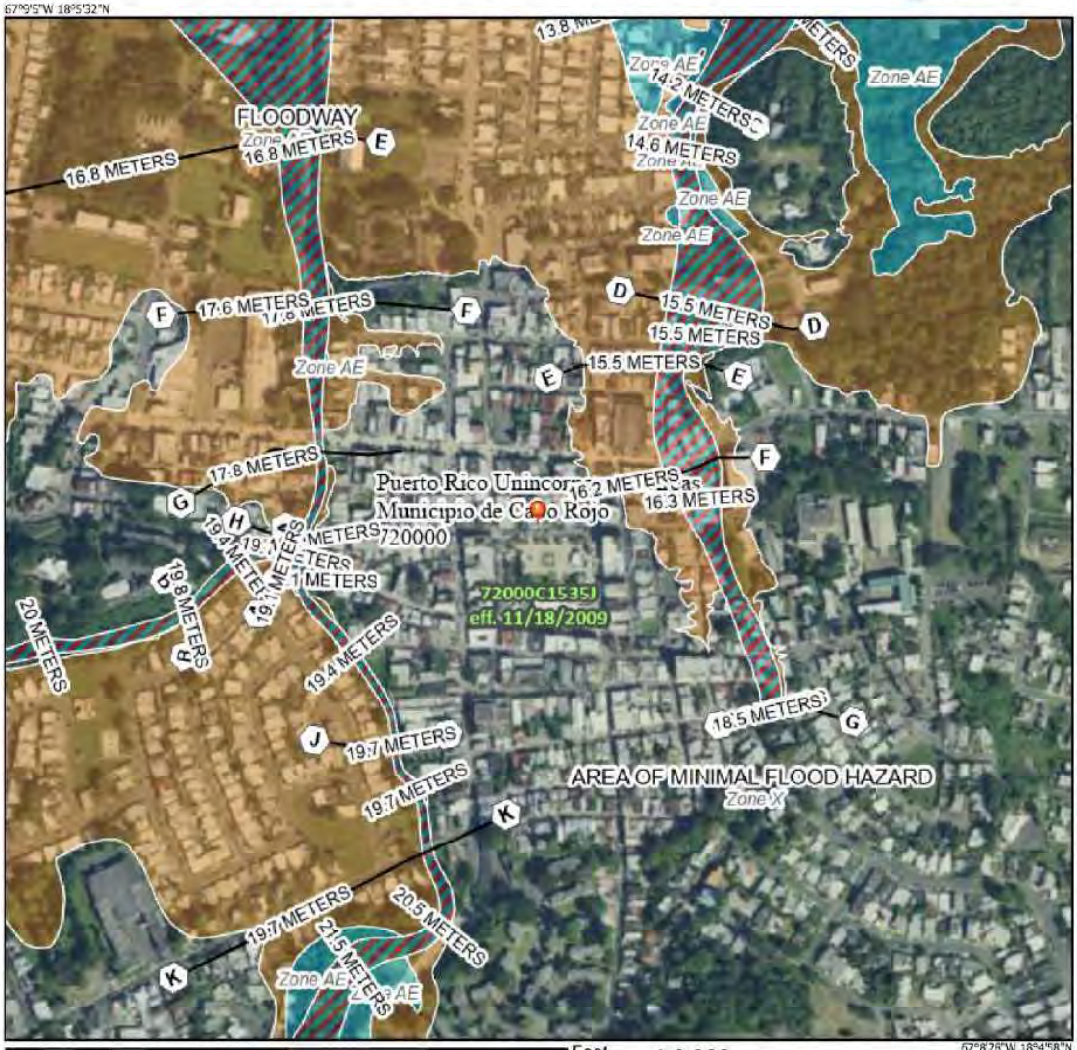
Exhibit 3a: FEMA FIRMette– PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229

National Flood Hazard Layer FIRMette

FEMA

67°9'5"W 18°5'32"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

67°8'25"W 18°4'58"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

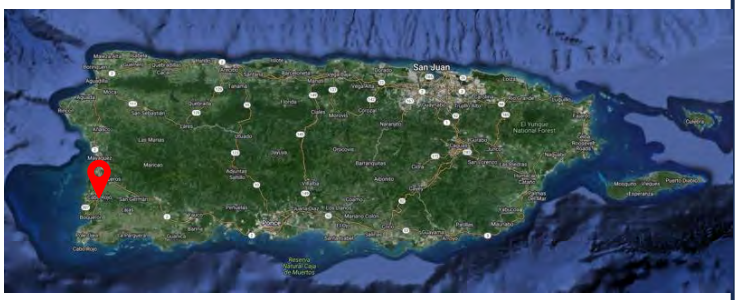
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/8/2025 at 6:48 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

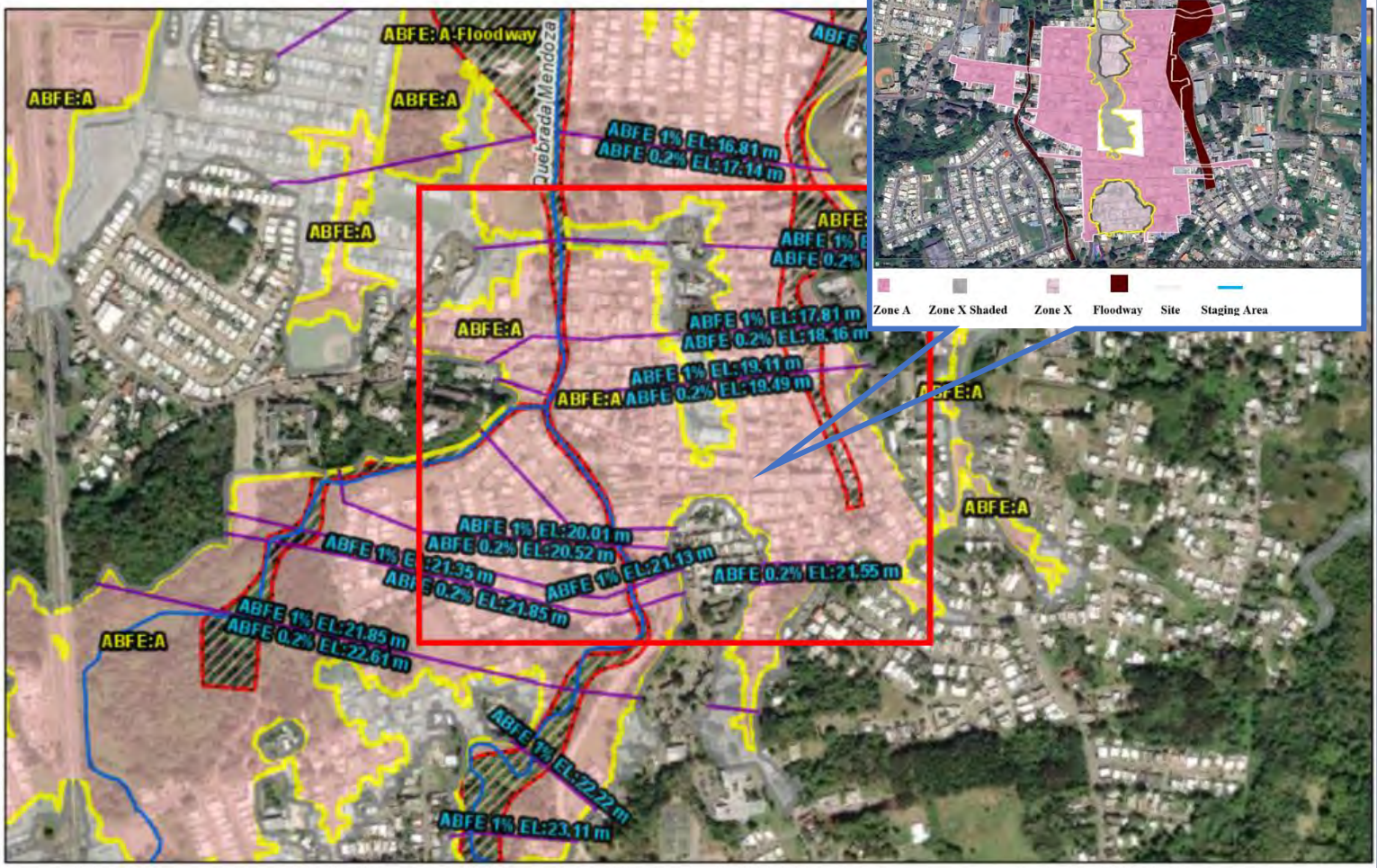
Project Area

Exhibit 3b: ABFEs Map – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229



ArcGIS Web Map



2/22/2024, 8:26:38 PM

Flood Hazard Area (zoom in to make visible)
A
AO
AE
Coastal A Zone
VE
0.2% Annual Chance Flood Zone
A-Floodway
AE-Floodway
Coastal A Zone and Floodway
Zone/BFE Boundary
Flood Hazard Extent
1% Annual Chance Flood
0.2% Annual Chance Flood
Limit of Moderate Wave Action (LIMWA)
Advisory Base Flood Elevation (zoom in to make visible)

Project Site - Several Streets in this Area

N
1:9,028
0 0.05 0.1 0.2 mi
0 0.1 0.2 0.4 km
FEMA, Maxar

ArcGIS Web AppBuilder
FEMA | Maxar |

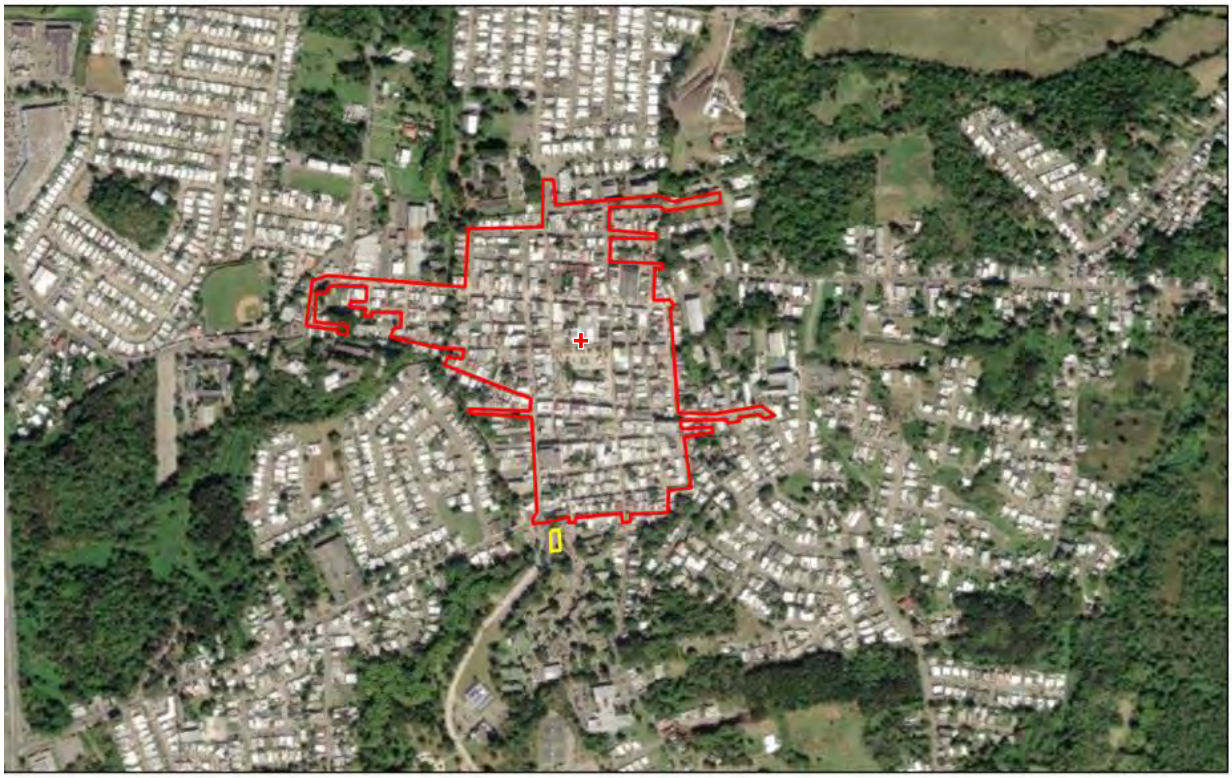
Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://gis-r2-fema.hub.arcgis.com/apps/31dfa1567194408 6b54b55bfc03344d7/explore;Google Earth

Exhibit 4: Air Quality – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229

Letter ANSI A Landscape

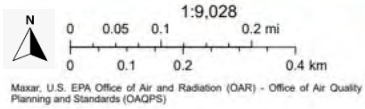


April 2, 2024

Staging Area

Site

+ Project Point

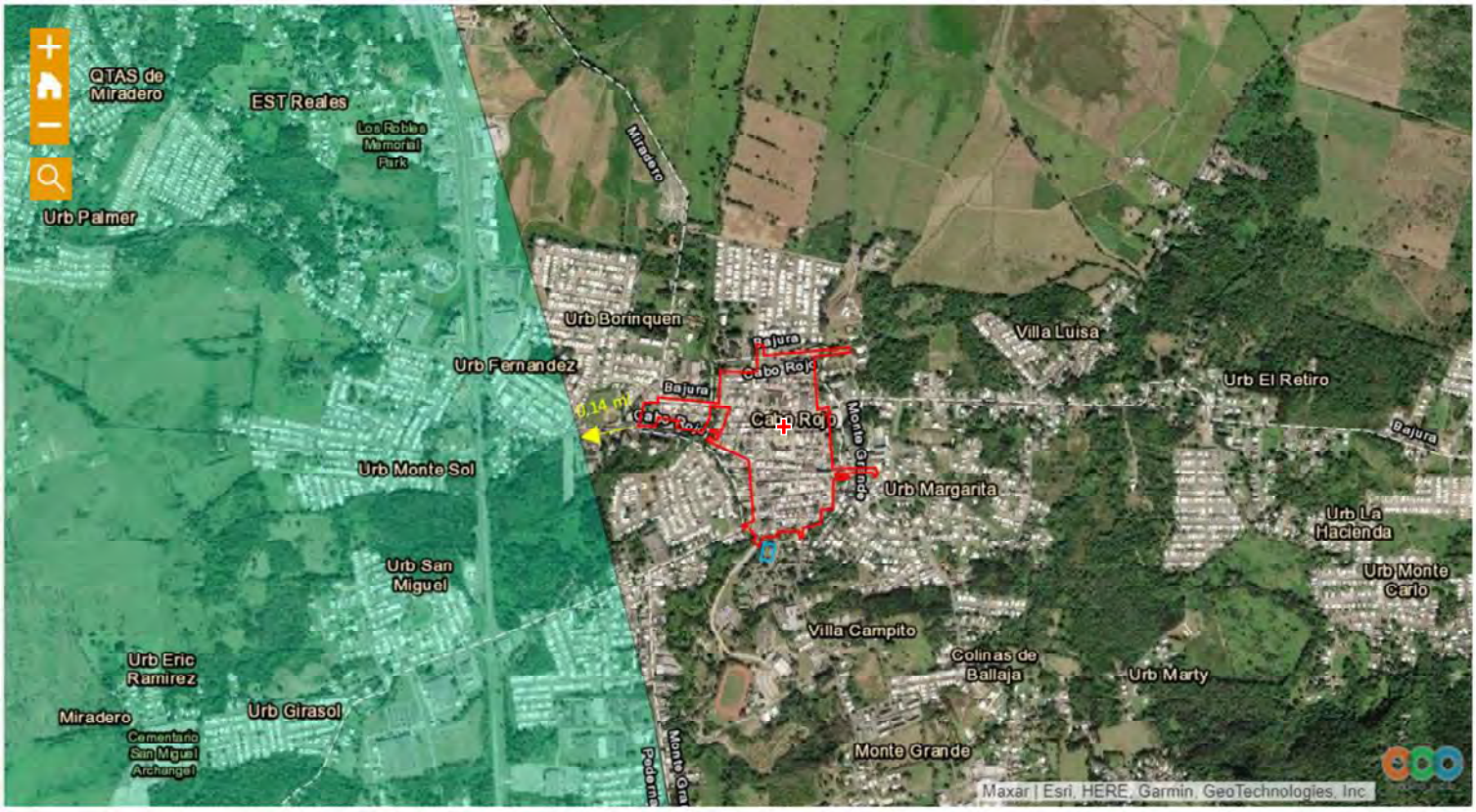


Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://nepassisttool.epa.gov/nepassist/nepamap.aspx

Exhibit 5: Coastal Zone Land Boundary – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229



Legend

- Coastal Zone Land Boundary
- Approx. Project Site - Several Streets in this Area
- Staging Area
- \+ Project Point

1:18,056
0 0.13 0.25 0.5 mi
0 0.23 0.45 0.9 km

N

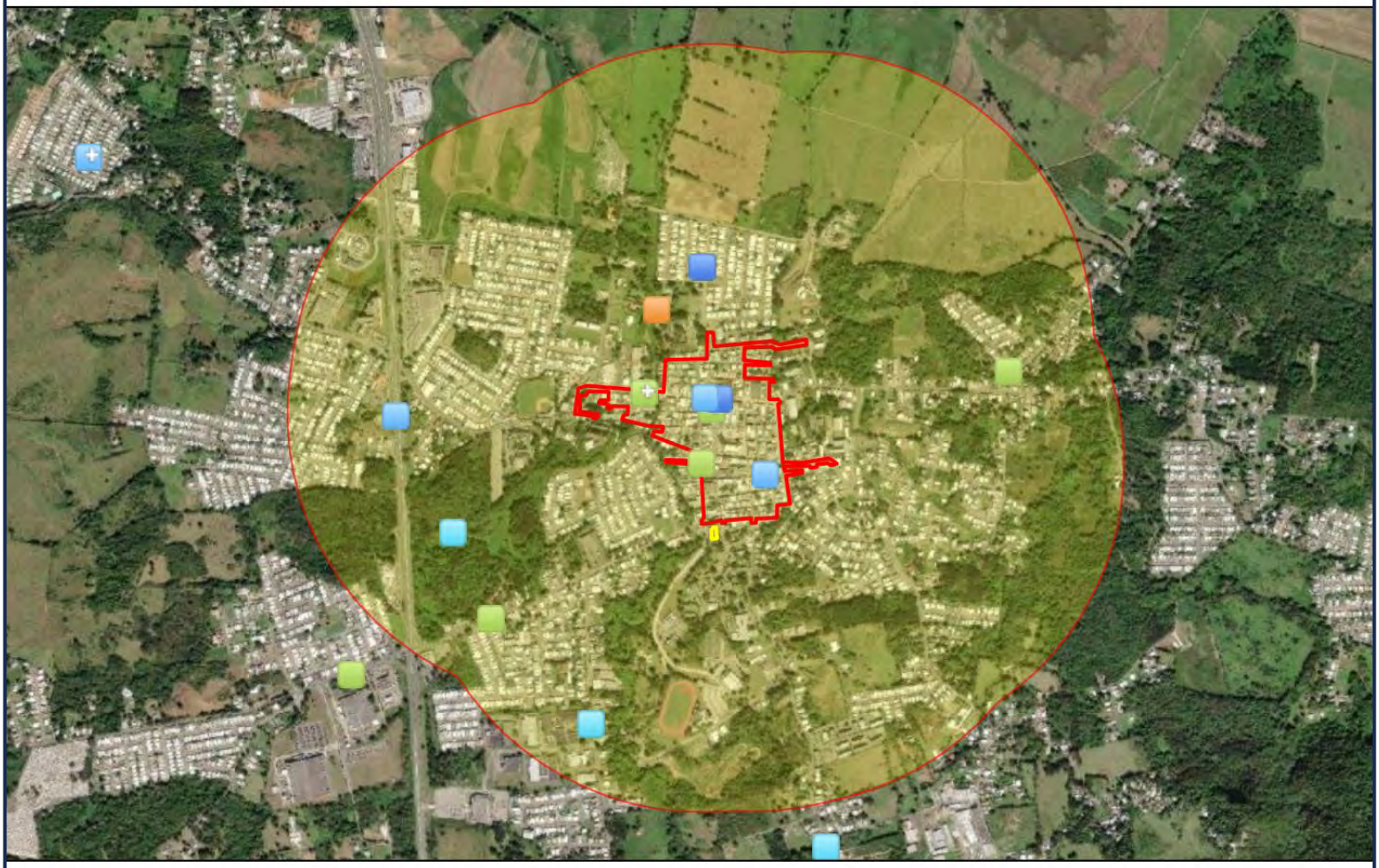
Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://drnapmzc.maps.arcgis.com/apps/MapTools/index.html?appid=e9e1788520a74242852b03494e739ea4

Exhibit 6a: NEPAssist Radius Map – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229

Letter ANSI A Landscape



April 2, 2024

Superfund (NPL)
Toxic Releases (TRI)
Water Dischargers (NPDES)
Water Dischargers (NPDES)
Air Pollution (ICIS-AIR)
Hazardous Waste (RCRAInfo)
Hazardous Waste (RCRAInfo)
Staging Area
Site
Buffer graphics (3,000 ft)

1:18,056

0 0.13 0.25 0.5 mi
0 0.23 0.45 0.9 km

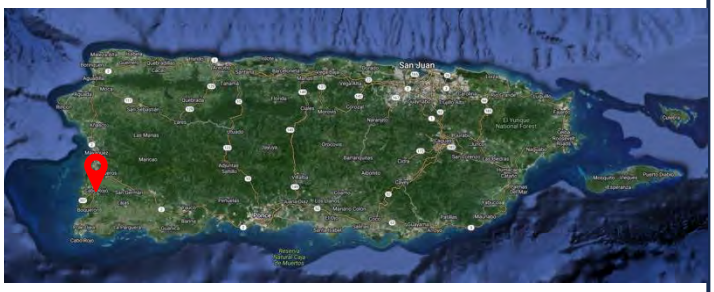
Maxar

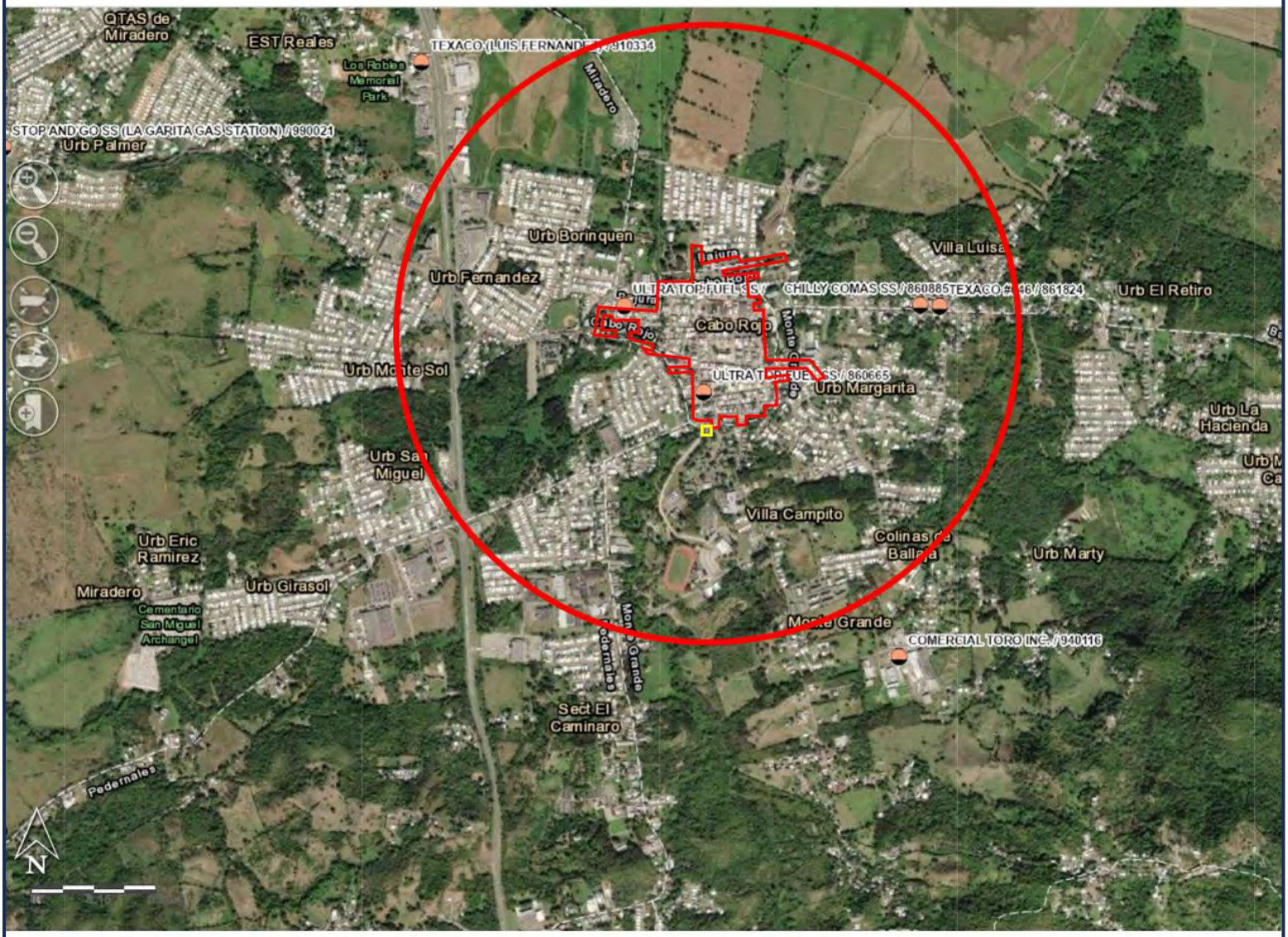
Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://nepassisttool.epa.gov/nepassist/nepamap.aspx

Exhibit 6a: JP GIS UST Map – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229





UST 0.5 mi Radius — Site — Staging Area

Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://gis.jp.gov/mipr/

Exhibit 7a: Endangered Species – IPaC
PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229

IPaC Information for Planning and Consultation — U.S. Fish & Wildlife Service — LOG IN

1 Find location

2 Define area

3 Confirm

Verify the area where project activities will occur

Modify the shape by clicking and dragging the vertices or clicking on a solid vertex to remove it

AREA: 46.15 acres

CONTINUE

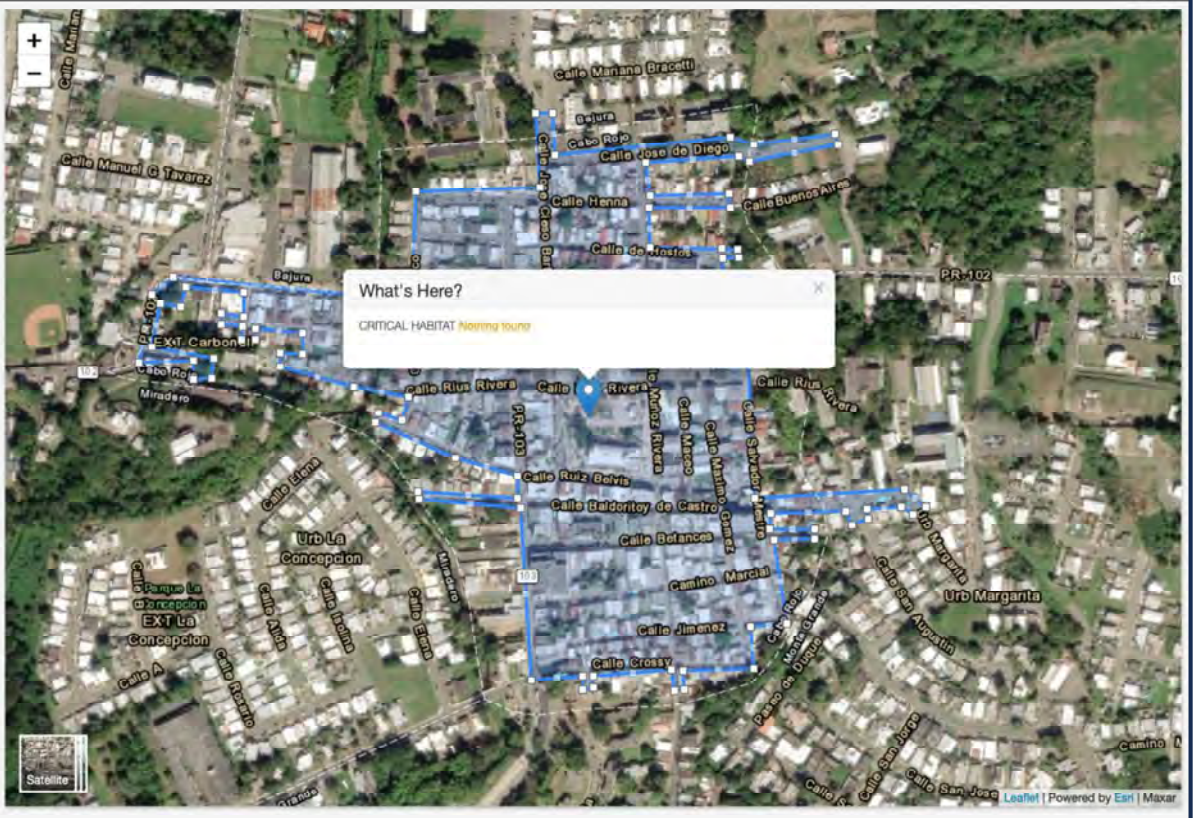
START OVER

New! Layers ADD

Critical Habitat

Final

Proposed



March 27, 2024

Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://ipac.ecosphere.fws.gov/location/index

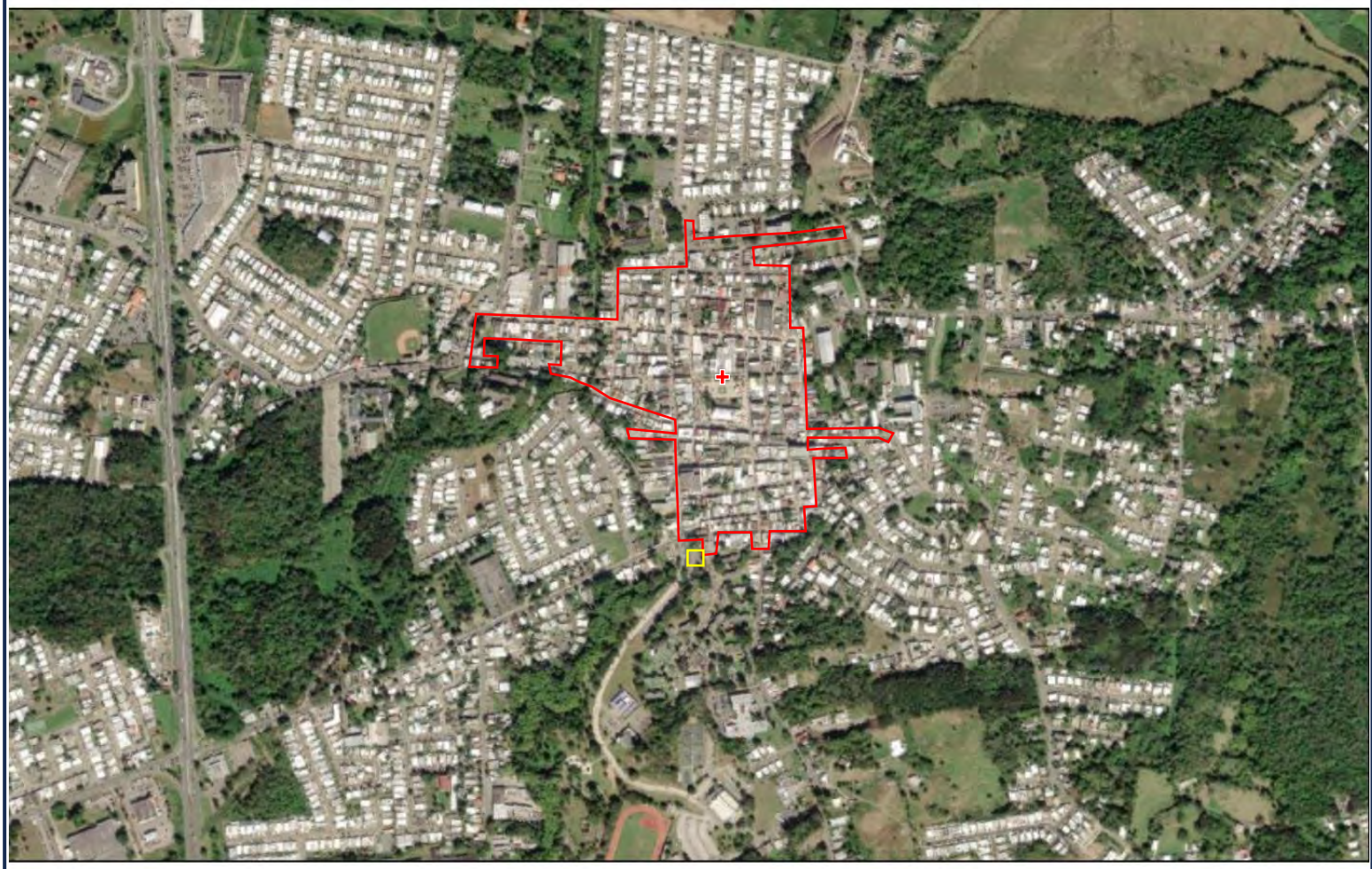
0 300 600 1200

feet

Exhibit 7b: Endangered Species – Critical Habitat Mapper - PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229

Critical Habitat for Threatened & Endangered Species [USFWS]



10/2/2024

World Imagery
Low Resolution 15m Imagery
High Resolution 60cm Imagery
High Resolution 30cm Imagery
Citations
2.4m Resolution Metadata

1:10,732
0 0.07 0.15 0.3 mi
0 0.13 0.25 0.5 km
Maxar

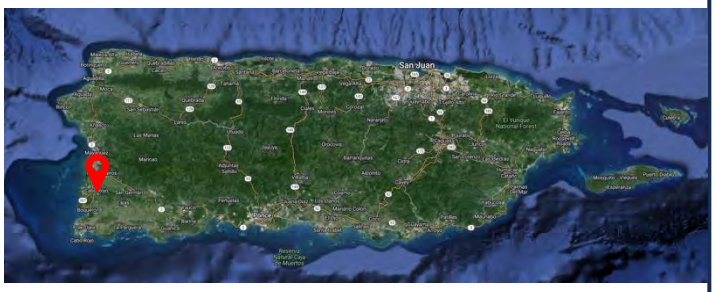
Site
Project Point
+ Staging Area

Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://fws.maps.arcgis.com/apps/mapviewer/index.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77

Exhibit 8: Farmlands Protection – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229



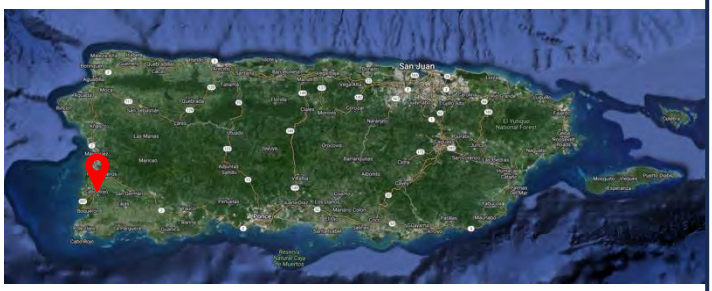
Project Site - Several Streets in this Area

Staging Area

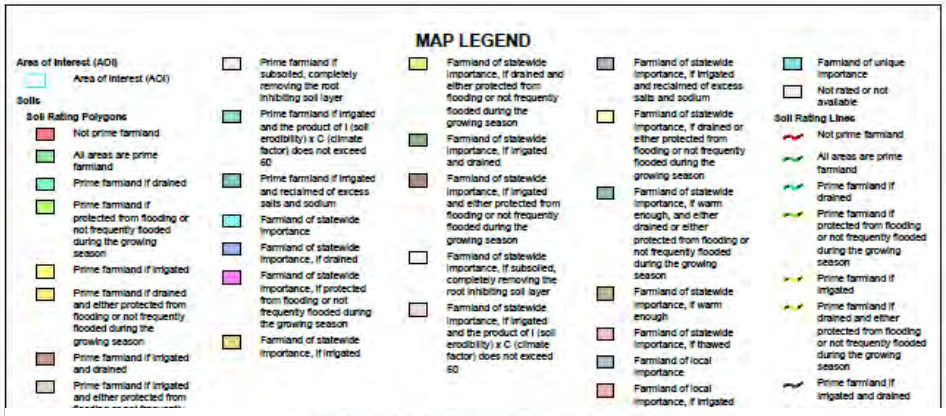
\+ Project Point

Exhibit 8: Farmlands Protection – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229



Farmland Classification—San German Area, Southwestern Puerto Rico



Farmland Classification—San German Area, Southwestern Puerto Rico

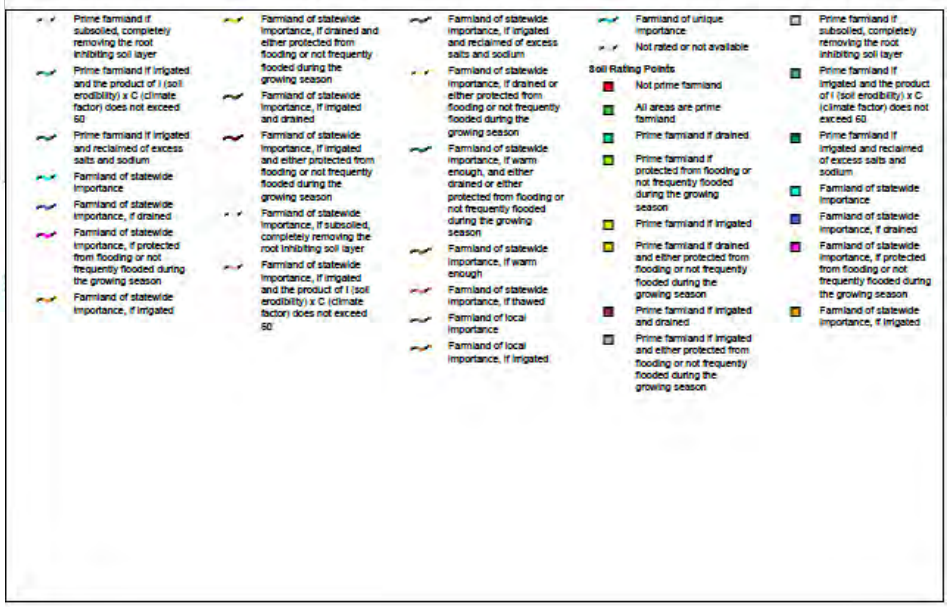
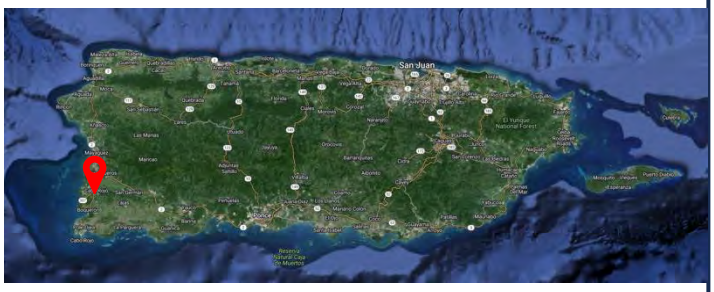
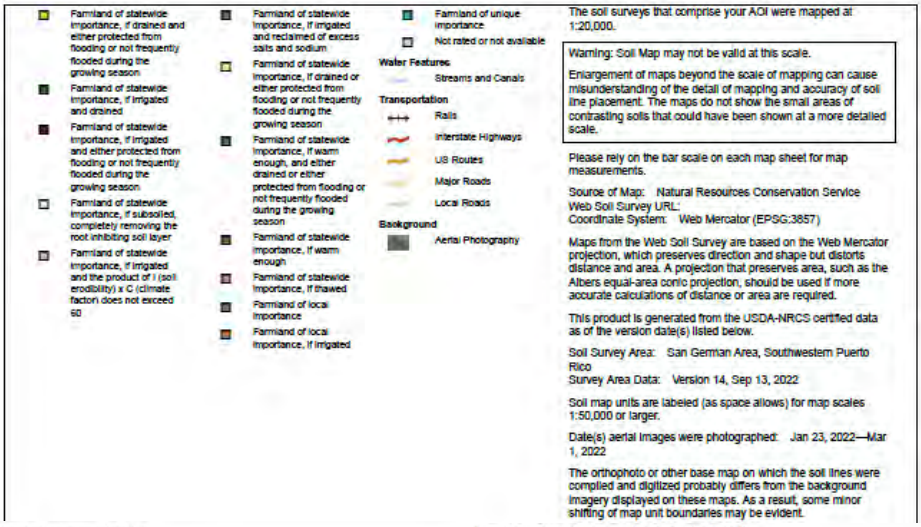


Exhibit 8: Farmlands Protection – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229



Farmland Classification—San German Area, Southwestern Puerto Rico



The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San German Area, Southwestern Puerto Rico
Survey Area Data: Version 14, Sep 13, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 23, 2022—Mar 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification—San German Area, Southwestern Puerto Rico

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CoA	Coloso clay, 0 to 2 percent slopes, occasionally flooded	Prime farmland if drained	4.4	1.6%
CsE	Consumo clay, 20 to 40 percent slopes	Farmland of statewide importance	0.2	0.1%
HmD	Humatas clay, 12 to 20 percent slopes	All areas are prime farmland	2.8	1.0%
MeA	Mani clay, 0 to 2 percent slopes, occasionally flooded	All areas are prime farmland	2.0	0.7%
MgC	Montegrande clay, 2 to 12 percent slopes	All areas are prime farmland	7.1	2.6%
MuD	Mucara loam, 12 to 20 percent slopes	Farmland of statewide importance	4.0	1.4%
MuE	Mucara loam, 20 to 40 percent slopes	Not prime farmland	18.6	6.7%
ToA	Toa clay loam, 0 to 2 percent slopes, occasionally flooded	All areas are prime farmland	6.2	2.2%
Ur	Urban land	Not prime farmland	231.3	83.6%
Totals for Area of Interest			276.6	100.0%

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

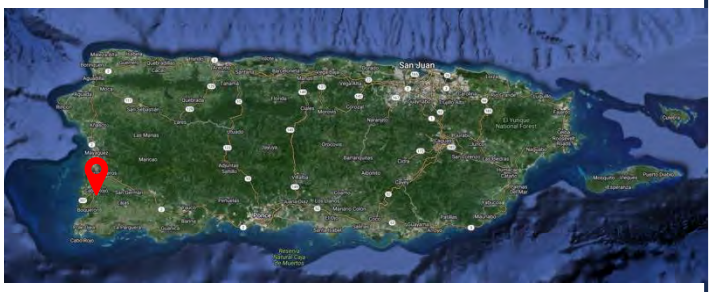
The majority of soil attributes are associated with a component of a map unit, and such an attribute has to be aggregated to the map unit level before a thematic map can be rendered. Map units, however, also have their own attributes. An attribute of a map unit does not have to be aggregated in order to render a corresponding thematic map. Therefore, the "aggregation method" for any attribute of a map unit is referred to as "No Aggregation Necessary".

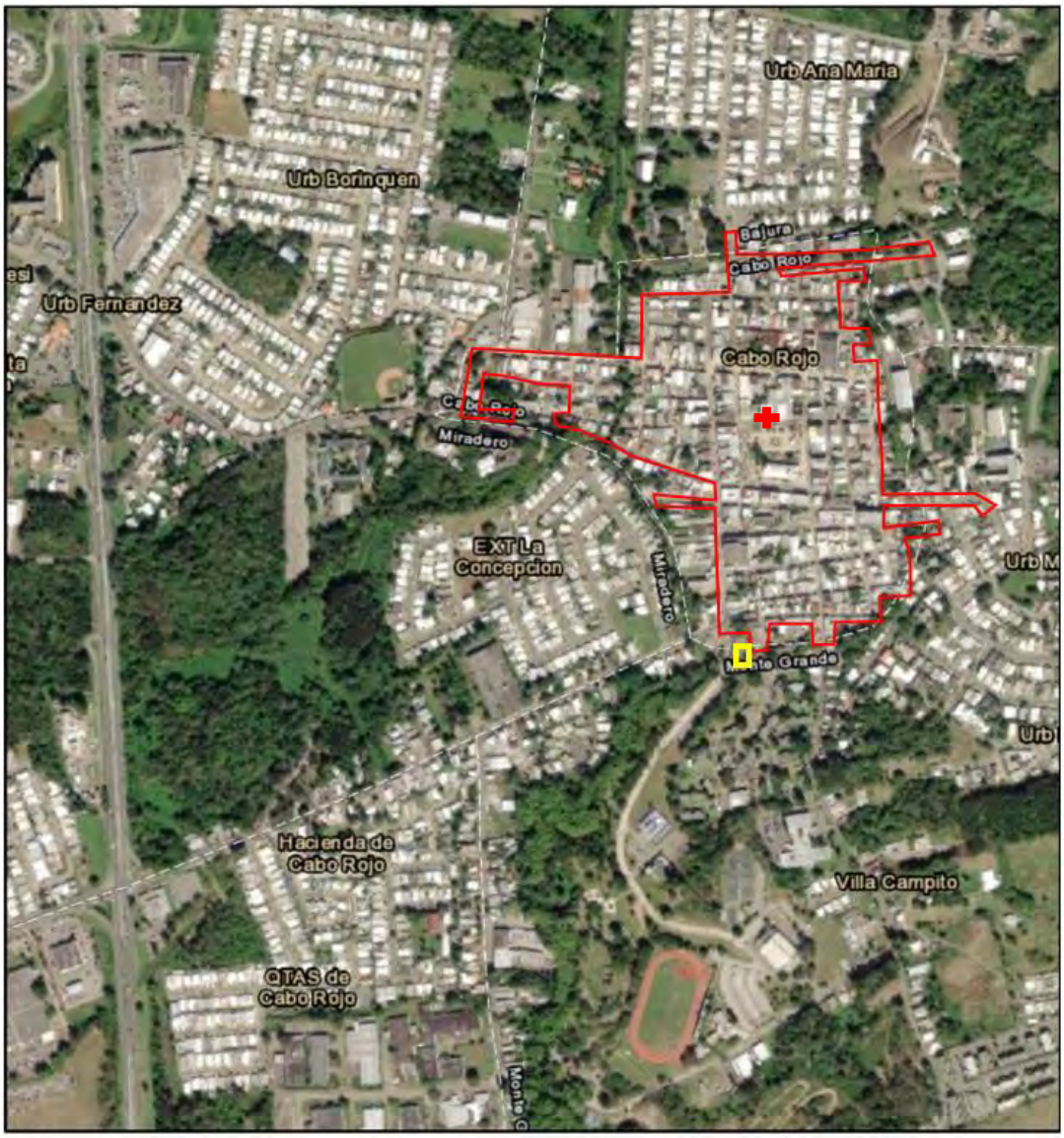
Tie-break Rule: Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Exhibit 9: Sole Source Aquifers – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229





10/18/2022, 9:30:38 PM

1:9,028

N

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Legend

Sole Source Aquifers

Project Site - Several Streets in this Area

Staging Area

\+ Project Point

Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b

Exhibit 9: Sole Source Aquifers
PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229

ArcGIS Web AppBuilder

12/9/2024, 9:21:14 PM

1:18,489,298

0 145 290 580 mi
0 230 460 920 km

Sole Source Aquifers

Project Point

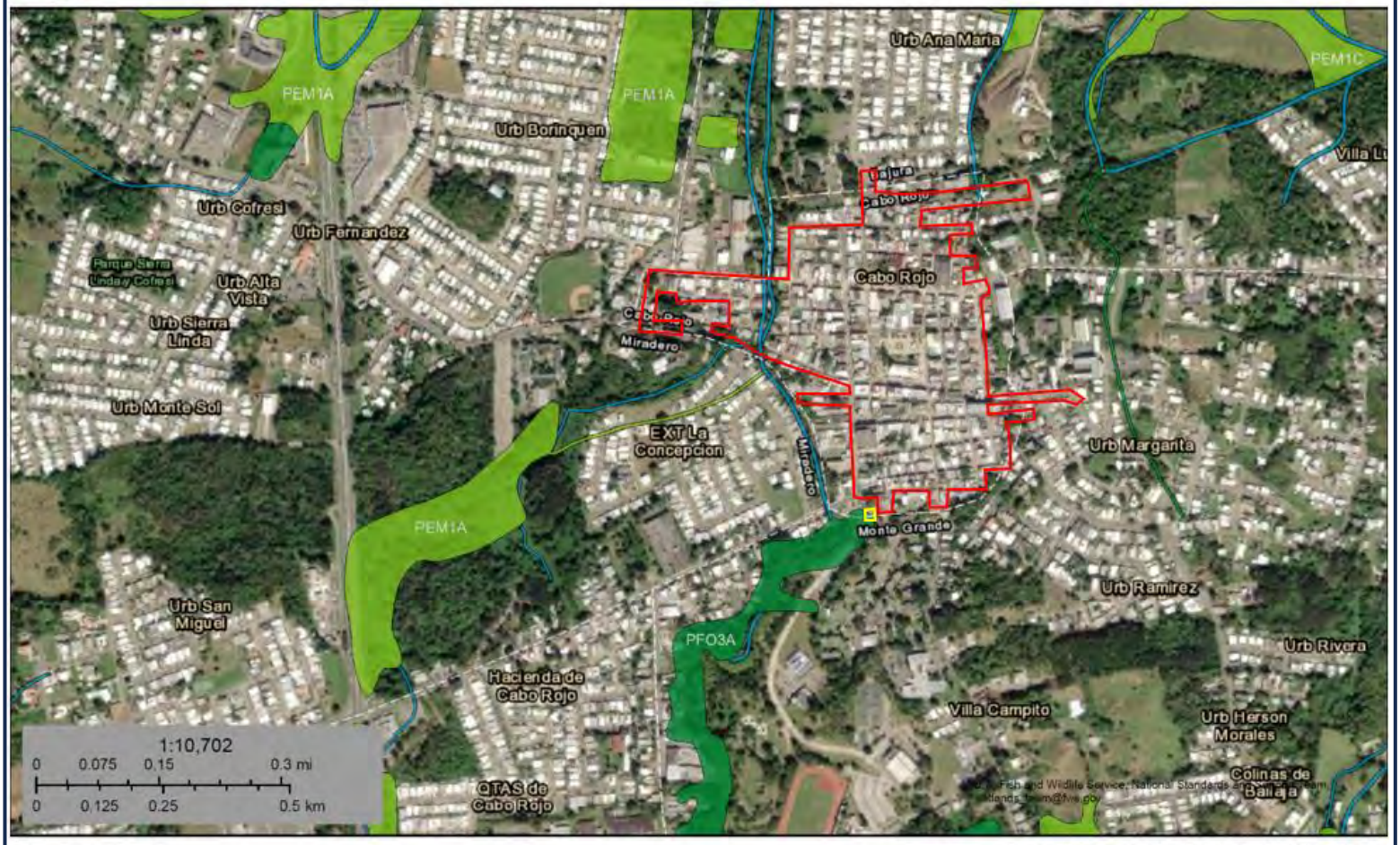
Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b

Exhibit 10: Wetlands – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229

U.S. Fish and Wildlife Service
National Wetlands Inventory



October 18, 2022

Wetlands

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

N

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

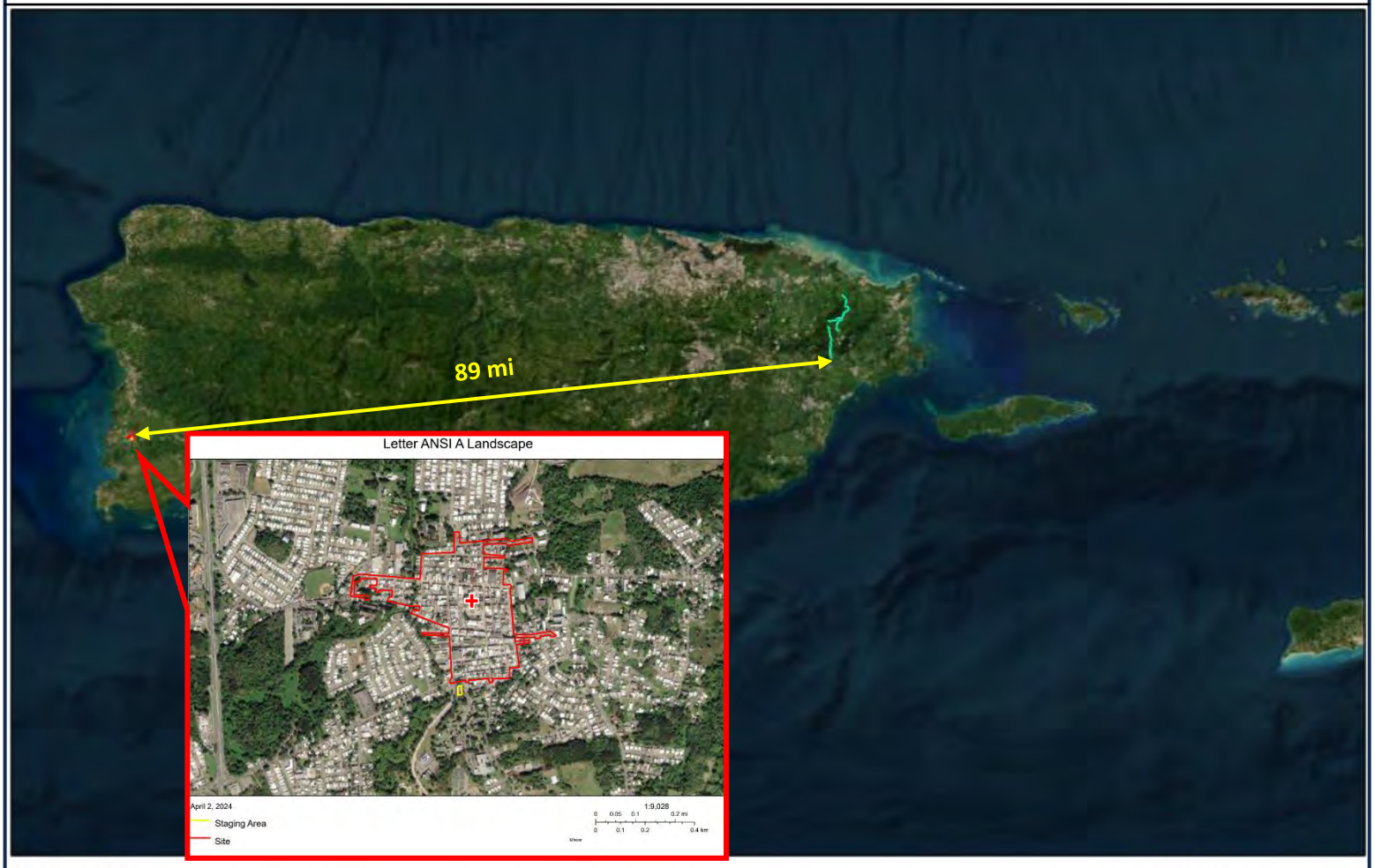
Source: https://fwsprimary.wim.usgs.gov/server/rest/directories/arcgisoutput

Project Site - Several Streets in this Area

Staging Area

Exhibit 11: Wild and Scenic Rivers – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229



April 8, 2024

Staging Area
Site
Wild and Scenic Rivers
+ Project Point

1:1,155,581
0 5 10 20 mi
0 15 30 60 km
Earthstar Geographics

Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://nepassisttool.epa.gov/nepassist/nepamap.aspx

Appendix B

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229

Exhibit 4b: 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 September 30, 2024

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

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

Change the State:
PUERTO RICO GO

Important Notes

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

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

Important Notes

Discover. **Connect.** **Ask.** **Follow.**

2024-09-30

Appendix C
LBP Report and ACM Report

LEAD-BASED PAINT SURVEY

CRP-000845 CABO ROJO REHABILITACIÓN DE LA INFRAESTRUCTURA DEL CENTRO URBANO

49 Cll Betances,

Cabo Rojo, Puerto Rico 00623

Inspection Date: May 1, 2025

Prepared for: BR&A, LLC

Prepared by: Nortol Environmental & Occupational Safety, Inc.

Inspector:

Sixto Suárez
Lead Inspector
LBP I.D. # LBPI-07325-095

nortol.
Environmental & Occupational Safety, Inc. Est. 2002

NORTOL *has performed this survey in a thorough and professional manner consistent with commonly accepted industry standards.*

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- Survey Protocol and Sampling Procedures
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Attachment 3 – LBP XRF Tabulated Readings

Attachment 4 – Representative Pictures\Photograph Log

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Attachment 6 – XRF Performance Characteristic Sheet

Acronyms

A/C	=	Air Conditioning
CFR	=	Code of Federal Regulations
CPSC	=	Consumer Product Safety Commission
EPA	=	Environmental Protection Agency
Ft2	=	square feet
HA	=	Homogeneous Area
HUD	=	Department of Housing and Urban Development
LBP	=	Lead-based Paint
LF	=	Linear Feet
mg/cm2	=	milligrams per square centimeter
NESHAP'S	=	National Emission Standards for Hazardous Air Pollutants
NIOSH	=	National Institute for Occupational Safety and Health
OSHA	=	Occupational Safety and Health Administration
PRDOH	=	Puerto Rico Department of Housing
PRDRNER	=	Puerto Rico Department of Natural and Environmental Resources
SOW	=	Scope of Work
XRF	=	X-Ray Fluorescent

I. INTRODUCTION

As part of the environmental due diligence, this survey is intended to assess the general presence, quantity, and location of LBP and lead-glazed ceramic components above allowable levels at *CRP-000845 Cabo Rojo Rehabilitación de La Infraestructura del Centro Urbano* project located at *49 Cll Betances, Cabo Rojo, P.R. 00623.*

The LBP survey, conforming to Housing Urban Development (HUD) Guidelines for the Evaluation and Control of Lead Based Paint in Housing, was conducted on May 1, 2025, by Mr. Sixto Suárez (Lead inspector number: LBPI-07325-095) from Nortol. Copy of Nortol's registration with the PRDNER as registered corporation is included in **Attachment 1**. Inspector's credential(s) is included in **Attachment 2.** Nortol's survey areas and report are limited to the details provided in Section II part D.

Based on the results of the survey, 61 XRF readings were performed using an XRF analyzer on identified and accessible surfaces in the exterior of the subject structure. LBP was not identified above the regulatory level of greater than or equal to 1.0 mg/cm^2 in the SOW.

There is concrete and metal structural components. The floors have bricks tiles, bare concrete.

II. LEAD BASED PAINT SURVEY REPORT

A. Lead Based Paint Findings:

LBP was not found in the project accessed components. Data from XRF analyzer testing is included in **Attachment 3**. **Attachment 4** includes Representative Pictures\Photograph Log of the structure. Certification for non-presence of lead-based paints or lead-glazes is provided in **Attachment 5.**

B. Survey Protocol and Sampling Procedure:

The survey was conducted following the *HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (as Revised, Chapter 7)*. The technique used for assessing the painted components was the XRF instrument. The following guidelines were used to perform LBP testing:

1. Achieve inventory of painted surfaces.
2. Select areas to be assessed.
3. Perform XRF testing.
4. Review and evaluate the data.
5. Report findings

The XRF instrument was set at Standard Paint Mode showing reading "Positive" or "Negative" with a 95% confident reading. The result is reported in mg/cm^2. **Attachment 6** includes the XRF Performance Characteristic Sheet (PCS) of the analyzer.

The **letters A, B, C**, and **D** used in the survey refers to:

A ⇒ Main entrance side orientation (to street)
B ⇒ Left side orientation
C ⇒ Rear side orientation
D ⇒ Right side orientation

C. Lead Based Paint Background and Regulatory Review:

Overexposure to lead is one of the most common situations found in industry. It is also a major potential public health risk. Lead poisoning is the leading environmentally induced illness in children. At greatest risk are children under the age of six because they are undergoing rapid neurological and physical development. In general population, lead may be present at hazardous concentrations in food, water, and air. Sources include LBP, urban soil, dust, and drinking water.

Lead is commonly added to industrial paints because of its characteristic to resist corrosion. Industries with particularly high potential exposures include construction work involving welding, cutting, brazing, blasting, etc., on lead paint surfaces; most smelter operations either as a trace contaminant or as a major product; secondary lead smelters where lead is recovered from batteries; radiator repair shops; and firing ranges. Oral ingestion may represent a major route of exposure in contaminated workplaces. Once in the blood, lead is distributed primarily among three routes - blood, soft tissue (kidney, bone marrow, liver, and brain) and mineralizing tissue (bones and teeth).

Hazard of lead in paint has been defined by the Department of Housing and Urban Development as 1.0 mg/cm^2 as measured by an XRF instrument, or Atomic Absorption Spectroscopy (AAS); or 0.5% by weight (or 5,000 ppm) as measured by AAS, or Inductive Coupled Plasma (ICP). The same level was adopted by EPA regulations published in 1992, under Title X.

Although OSHA regulations for occupational lead exposure have been in effect since 1971 for the construction and general industries, the agency recognized the need to provide better protection and revised the regulations for general industry in 1978. The 1978 lead standard, however, excluded the construction industry from coverage because of insufficient information regarding lead use in construction.

In 1990, NIOSH set a national goal to eliminate worker exposures resulting in blood lead concentrations greater than 25 micrograms per deciliter (25 µg/dl) of whole blood. Consequently, OSHA began developing a proposal for a comprehensive standard regulating occupational exposure to lead in construction. In October 1992, the Congress passed Section 1031 of Title X of the Housing and Community Development Act of 1992 (P. L. 102-550) requiring OSHA to issue an interim final lead standard for the construction industry, effective until OSHA issues a final standard. The interim final rule, published on May 4, 1993, amends the OSHA standards for occupational health and environmental controls in Subpart D of Title 29 CFR 1926 by adding a new section 1926.62, containing employee protection requirements for construction workers exposed to lead.

On July 1998, the PRDNER - former PR Environmental Quality Board regulations regarding to LBP was created to issue activity permits, accredit institutions, and certificate persons involved in LBP activities in Puerto Rico. Local regulations require all lead to be managed as a special waste. On July 2019 this regulation was replaced by the new *Reglamento para el Manejo Adecuado de Actividades de Pintura con Base de Plomo*. To obtain a demolition permit in Puerto Rico is necessary to include a certification (OGP-PGC-010 or equivalent) stating that there is no LBP in the project.

D. Survey Areas – Extent of Survey Coverage:

The survey included a detailed structure inspection providing a general sense of the overall location, type, quantity, and condition of LBP and LBP ceramic components. The LBP survey was performed to ready accessible components and surfaces. If any suspect coated surface or ceramic components, that could contain lead, are encountered underneath current installed tiles or other construction material during demolition and/or renovation activities, which differ from materials tested during the LBP survey, these should be assumed to be Lead containing until testing/analysis confirmed otherwise. The survey was unobtrusive as samples were not taken where doing so would have resulted in objectionable damage to surfaces. Therefore, the survey did not include destructive, intrusive and/or exploratory testing.

Areas Not Included in Survey and Service Constraints: All professional opinions presented in this report are based on information made available either by review of data provided by others or data gathered by Nortol personnel. Nortol affirms that data gathered and presented by Nortol in this report was collected in an appropriate manner in accordance with accepted methods and practices. Any energized utilities/services, including electricity, water and heat were assumed to be active. Materials associated with these items were determined to not be safely accessible and were not sampled. The survey did not include access or inspection of confined spaces or

subsurface/underground areas including piping, conduits, building footings and soils (surficial or otherwise).

III. CONCLUSION

LBP survey was conducted for the project identified with the header ID. LBP or lead-glaze was not identified above the regulatory level of greater than or equal to 1.0 mg/cm^2 at the subject structure. In addition, lead containing ceramic components were not identified to contain lead above the regulatory level.

Data from XRF analyzer testing results is included in **Attachment 3**. **Attachment 4** includes Representative Pictures\Photograph Log of the structure. Certification for non-presence of lead-based paints or lead-glazes is provided in **Attachment 5.**

Any conditions or materials that could not be visually identified or were out-of-the SOW, were not inspected and may differ from those conditions or materials noted. It was not within the scope of the activity to remove surface materials to investigate portions of the structure or materials that may lay beneath the surface. Nortol's selection of sample locations and frequency of sampling was based on Nortol's observations and the assumption that similar materials in the same area are homogeneous in content.

The report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos or lead abatement contractors in locating LBP or lead-glaze. Under no circumstances is the report to be utilized solely as a bidding document or as a project specification document.

Attachment 1

Company Credentials

nortol.
Environmental & Occupational Safety, Inc. Est. 2002

GOBIERNO DE PUERTO RICO

Departamento de Recursos Naturales y Ambientales

Este certificado es otorgado a:

Nortol Environmental & Occupational Safety

Por haber cumplido con los requisitos establecidos en el Capítulo VI, Regla 127 del Reglamento para el Manejo Adecuado de Actividades de Pintura con Base de Plomo. Se le otorga esta certificación como **Firma** para llevar a cabo actividades relacionadas a Mitigación de Pintura con base de plomo en la jurisdicción de Puerto Rico.

Número de Certificado

LBPF-04425-013

Fecha de emisión: Marzo 5, 2025

Fecha de Expiración: Marzo 4, 2026

DRNA

Firma Autorizada
Departamento de Recursos Naturales
y Ambientales

LEAD-SAFE
EPA
CERTIFIED FIRM

NAT-F121771-3

www.nortolpr.com
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PO Box 366457, San Juan, PR 00936-6457

20 ANNIVERSARY
nortol.
Environmental & Occupational Safety Est. 2002

Attachment 2
Inspector's Credentials

SIXTO SUAREZ

Puerto Rico

Lead-based Paint Inspector

www.nortolpr.com | info@nortolpr.com | 787.420.0220
PO Box 366457, San Juan, PR 00936-6457

Attachment 3

LBP XRF Tabulated Readings

CRP-000845 Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano - XRF SHEET

Company	Heuresis Corp.
Model	PBOOI
Type	XRF Lead Paint Analyzer
Serial Num.	2279
App Version	PBOOI-4.1-11

Job Id	Reading #	Concentration	Units	Result	Level	Date	Time	Inspector	Job	Room	Structure	Component	Substrate	Wall	Color	Condition	Approx. Qty.
-	1	1	mg/cm2	Positive	1	5/1/2025	9:39:58	S. SUAREZ	-	-	Calibration	-	-	-	-	-	-
-	2	1	mg/cm2	Positive	1	5/1/2025	9:40:13	S. SUAREZ	-	-	Calibration	-	-	-	-	-	-
-	3	1.1	mg/cm2	Positive	1	5/1/2025	9:40:30	S. SUAREZ	-	-	Calibration	-	-	-	-	-	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	4	0	mg/cm2	Negative	1	5/1/2025	9:42:08	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	5	0	mg/cm2	Negative	1	5/1/2025	9:42:18	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	6	0	mg/cm2	Negative	1	5/1/2025	9:42:29	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	7	0	mg/cm2	Negative	1	5/1/2025	9:42:42	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	8	0.3	mg/cm2	Negative	1	5/1/2025	9:42:52	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	9	0.2	mg/cm2	Negative	1	5/1/2025	9:43:03	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	10	0	mg/cm2	Negative	1	5/1/2025	9:43:20	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	11	0.2	mg/cm2	Negative	1	5/1/2025	9:43:40	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Unpainted	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	12	0	mg/cm2	Negative	1	5/1/2025	9:43:48	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Unpainted	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	13	0.1	mg/cm2	Negative	1	5/1/2025	9:43:57	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Unpainted	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	14	0	mg/cm2	Negative	1	5/1/2025	9:44:28	S. SUAREZ	100-116	Exterior	Open Area	Floor	Brick	-	Red	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	15	0.2	mg/cm2	Negative	1	5/1/2025	9:44:38	S. SUAREZ	100-116	Exterior	Open Area	Floor	Brick	-	Red	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	16	0.3	mg/cm2	Negative	1	5/1/2025	9:44:47	S. SUAREZ	100-116	Exterior	Open Area	Floor	Brick	-	Red	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	17	0.2	mg/cm2	Negative	1	5/1/2025	9:44:56	S. SUAREZ	100-116	Exterior	Open Area	Floor	Brick	-	Red	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	18	0	mg/cm2	Negative	1	5/1/2025	9:45:44	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Red	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	19	0	mg/cm2	Negative	1	5/1/2025	9:45:53	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Red	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	20	0	mg/cm2	Negative	1	5/1/2025	9:46:00	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Red	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	21	0.1	mg/cm2	Negative	1	5/1/2025	9:46:09	S. SUAREZ	100-116	Exterior	Open Area	Curb	Concrete	-	Red	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	22	0.2	mg/cm2	Negative	1	5/1/2025	9:46:34	S. SUAREZ	100-116	Exterior	Open Area	Pole	Metal	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	23	0.4	mg/cm2	Negative	1	5/1/2025	9:46:45	S. SUAREZ	100-116	Exterior	Open Area	Pole	Metal	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	24	0	mg/cm2	Negative	1	5/1/2025	9:47:06	S. SUAREZ	100-116	Exterior	Open Area	Pole	Metal	-	Gray	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	25	0.1	mg/cm2	Negative	1	5/1/2025	9:47:14	S. SUAREZ	100-116	Exterior	Open Area	Pole	Metal	-	Gray	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	26	0	mg/cm2	Negative	1	5/1/2025	9:47:42	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	27	0	mg/cm2	Negative	1	5/1/2025	9:47:50	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	28	0.2	mg/cm2	Negative	1	5/1/2025	9:48:08	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Blue	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	29	0	mg/cm2	Negative	1	5/1/2025	9:48:16	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Blue	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	30	0.1	mg/cm2	Negative	1	5/1/2025	9:48:33	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Beige	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	31	0.1	mg/cm2	Negative	1	5/1/2025	9:48:48	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Beige	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	32	0	mg/cm2	Negative	1	5/1/2025	9:49:06	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Blue	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	33	0	mg/cm2	Negative	1	5/1/2025	9:49:14	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Blue	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	34	0	mg/cm2	Negative	1	5/1/2025	9:49:41	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	35	0	mg/cm2	Negative	1	5/1/2025	9:49:50	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	36	0	mg/cm2	Negative	1	5/1/2025	9:49:58	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	37	0	mg/cm2	Negative	1	5/1/2025	9:50:14	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Blue	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	38	0	mg/cm2	Negative	1	5/1/2025	9:50:30	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Beige	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	39	0	mg/cm2	Negative	1	5/1/2025	9:50:48	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Beige	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	40	0	mg/cm2	Negative	1	5/1/2025	9:51:09	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	41	0	mg/cm2	Negative	1	5/1/2025	9:51:29	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Blue	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	42	0	mg/cm2	Negative	1	5/1/2025	9:51:44	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Beige	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	43	0	mg/cm2	Negative	1	5/1/2025	9:52:27	S. SUAREZ	100-116	Exterior	Open Area	Tree Bench	Concrete	-	Beige	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	44	0.1	mg/cm2	Negative	1	5/1/2025	9:52:35	S. SUAREZ	100-116	Exterior	Open Area	Tree Bench	Concrete	-	Beige	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	45	0	mg/cm2	Negative	1	5/1/2025	9:52:52	S. SUAREZ	100-116	Exterior	Open Area	Tree Bench	Concrete	-	Blue	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	46	0	mg/cm2	Negative	1	5/1/2025	9:53:01	S. SUAREZ	100-116	Exterior	Open Area	Tree Bench	Concrete	-	Blue	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	47	0.1	mg/cm2	Negative	1	5/1/2025	9:53:17	S. SUAREZ	100-116	Exterior	Open Area	Tree Bench	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	48	0	mg/cm2	Negative	1	5/1/2025	9:53:26	S. SUAREZ	100-116	Exterior	Open Area	Tree Bench	Concrete	-	Yellow	Deteriorated	-
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	49	0	mg/cm2	Negative	1	5/1/2025	9:53:57	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Beige	Deteriorated	RETEST
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	50	0	mg/cm2	Negative	1	5/1/2025	9:54:05	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Yellow	Deteriorated	RETEST
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	51	0	mg/cm2	Negative	1	5/1/2025	9:54:14	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Blue	Deteriorated	RETEST
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	52	0.1	mg/cm2	Negative	1	5/1/2025	9:54:28	S. SUAREZ	100-116	Exterior	Open Area	Bench	Concrete	-	Beige	Deteriorated	RETEST
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	53	0.1	mg/cm2	Negative	1	5/1/2025	9:54:36	S. SUAREZ	100-116	Exterior	Open Area	Tree Bench	Concrete	-	Beige	Deteriorated	RETEST
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	54	0	mg/cm2	Negative	1	5/1/2025	9:54:50	S. SUAREZ	100-116	Exterior	Open Area	Tree Bench	Concrete	-	Beige	Deteriorated	RETEST
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	55	0	mg/cm2	Negative	1	5/1/2025	9:55:15	S. SUAREZ	100-116	Exterior	Open Area	Tree Bench	Concrete	-	Blue	Deteriorated	RETEST
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	56	0	mg/cm2	Negative	1	5/1/2025	9:55:23	S. SUAREZ	100-116	Exterior	Open Area	Tree Bench	Concrete	-	Blue	Deteriorated	RETEST

CRP-000845 Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano - XRF SHEET

Company	Heuresis Corp.
Model	P800I
Type	XRF Lead Paint Analyzer
Serial Num.	2279
App Version	P800I-4.1-11

Job id	Reading #	Concentration	Units	Result	Level	Date	Time	Inspector	Job	Room	Structure	Component	Substrate	Wall	Color	Condition	Approx. Qty.
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	57	0.1	mg/cm2	Negative	1	5/1/2025	9:55:33	S. SUAREZ	100-116	Exterior	Open Area	Tree Bench	Concrete	-	Yellow	Deteriorated	RETEST
Cabo Rojo Rehabilitación de la Infraestructura del Centro Urbano	58	0	mg/cm2	Negative	1	5/1/2025	9:55:47	S. SUAREZ	100-116	Exterior	Open Area	Tree Bench	Concrete	-	Yellow	Deteriorated	RETEST
-	59	1	mg/cm2	Positive	1	5/1/2025	9:59:41	S. SUAREZ	-	-	Calibration	-	-	-	-	-	-
-	60	1	mg/cm2	Positive	1	5/1/2025	9:59:58	S. SUAREZ	-	-	Calibration	-	-	-	-	-	-
-	61	1	mg/cm2	Positive	1	5/1/2025	10:00:13	S. SUAREZ	-	-	Calibration	-	-	-	-	-	-

Attachment 4

Representative Pictures\Photograph Log

Sixto Suárez

NORTOL. Environmental & Occupational Safety, Inc.

CRP-000845 CABO ROJO REHABILITACIÓN DE LA INFRAESTRUCTURA DEL CENTRO URBANO - LBP SURVEY PHOTO LOG

Built circa: Not available at the moment of the inspection

Thursday, May 1, 2025

Prepared For BR&A, LLC

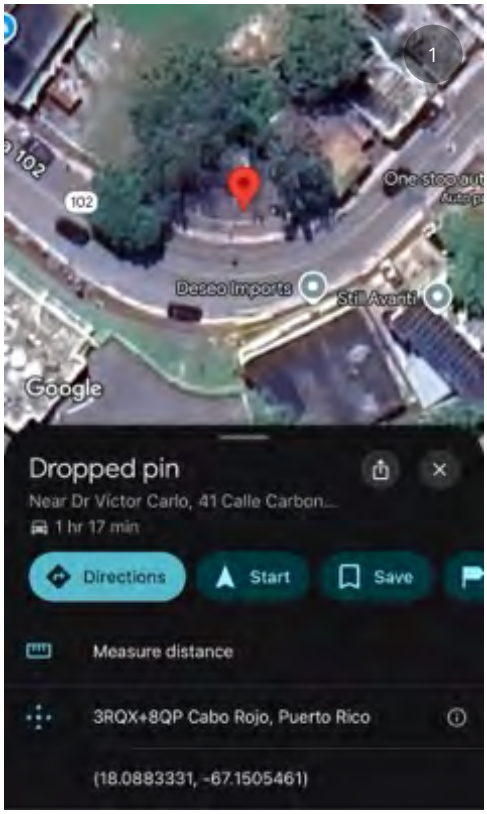
49 CII BETANCES CABO ROJO, P.R. 00623

FRONT VIEW:

(18.0883331, -67.1505461)

LOCATION:

(18.0883331, -67.1505461)



SCOPE OF WORK:

Full Inspection A/L

Job Id: LBP/ASB-2025-328

EXTERIOR GENERAL VIEWS:

IS THERE ANY AREA WITHOUT ACCESS?

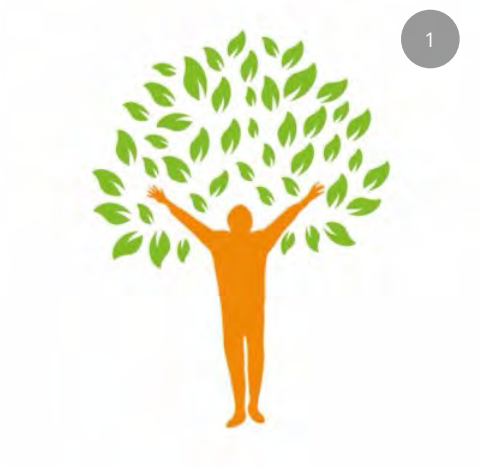
No.

IS THERE ANY VISIBLE INDICATION OF MOLD?

Yes, mold was found visible at the moment of the inspection.

ARE THERE SIGNS OF POOR HOUSEKEEPING ON SITE? (MOUNDS OF RUBBLE, GARBAGE, STORM DEBRIS, SOLID WASTE, PETROLEUM PRODUCTS, PAINT, PESTICIDES, CLEANING FLUIDS, VEHICLE BATTERIES, ABANDONED VEHICLES, PITS, POOLS, PONDS OF HAZARDOUS SUBSTANCES, ETC.)

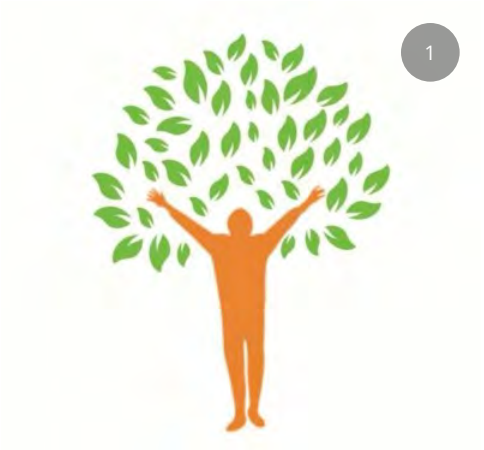
Not found at the moment of the inspection.



1

ARE ANY ADDITIONAL SITE HAZARDS OBSERVED?

Not found at the moment of the inspection.



1

LBP DETECTED?

No LBP detected at the moment of the inspection.

Attachment 5
Certification for Non-Presence LBP

GOBIERNO DE PUERTO RICO
OFICINA DEL GOBERNADOR
JUNTA DE CALIDAD AMBIENTAL

Área de Calidad de Agua

OGPe
Oficina de Gerencia de Permisos

Forma PGC-010

CERTIFICACION DE NO PRESENCIA DE PINTURA CON BASE DE PLOMO EN ESTRUCTURAS A DEMOLERSE

(Deberá completarse en letra de molde o impresa)

PGC-_____
PARA USO OFICIAL

SUBMITTED AS SEPARATE DOCUMENT

Attachment 6

XRF Performance Characteristic Sheet

Performance Characteristic Sheet

EFFECTIVE DATE: **September 1, 2022**

MANUFACTURER AND MODEL:

Make: ***Heuresis***
Models: ***Model Pb200i, Pb200e***
Source: ***^{57}Co, 5 mCi (nominal – new source)***

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Action Level 1.0 mg/cm^2

XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm^2 (inclusive)

SUBSTRATE CORRECTION:

Not applicable

INCONCLUSIVE RANGE OR THRESHOLD:

ACTION LEVEL MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm^2)
Results not corrected for substrate bias on any substrate	Brick Concrete Drywall Metal Plaster Wood	1.0 1.0 1.0 1.0 1.0 1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated using test results on building components in the HUD archive. Testing was conducted on 146 test samples in November 2015, with two separate instruments running software version 2.1-2 in Action Level test mode. The actual source strength of each instrument on the day of testing was approximately 2.0 mCi; source ages were approximately one year.

OPERATING PARAMETERS

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

XRF CALIBRATION CHECK:

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm^2 in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm^2 film).

If the average (rounded to 1 decimal place) of three readings is outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instrument into control before XRF testing proceeds.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Chapter 7 of the HUD Guidelines provides guidance on correcting XRF results for substrate bias. Supplemental guidance for using the paint film nearest 1.0 mg/cm^2 for substrate correction is provided:

XRF results are corrected for substrate bias by subtracting from each XRF result a correction value determined separately in each house for single-family housing or in each development for multifamily housing, for each substrate. The correction value is an average of XRF readings taken over the NIST SRM paint film nearest to 1.0 mg/cm^2 at test locations that have been scraped bare of their paint covering. Compute the correction values as follows:

> Using the same XRF instrument, take three readings on a bare substrate area covered with the NIST SRM paint film nearest 1 mg/cm^2. Repeat this procedure by taking three more readings on a second bare substrate area of the same substrate covered with the NIST SRM.
>
> Compute the correction value for each substrate type where XRF readings indicate substrate correction is needed by computing the average of all six readings as shown below.
>
> <u>For each substrate type</u> (the 1.02 mg/cm^2 NIST SRM is shown in this example; use the actual lead loading of the NIST SRM used for substrate correction):
>
> Correction value = (1st + 2nd + 3rd + 4th + 5th + 6th *Reading*)/6 - 1.02 mg/cm^2
>
> Repeat this procedure for each substrate requiring substrate correction in the house or housing development.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing.

Conduct XRF re-testing at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below. Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family and multi-family housing, a result is defined as a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and the retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF readings.

Compute the average of all ten re-test XRF readings.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

TESTING TIMES:

In the Action Level paint test mode, the instrument takes the longest time to complete readings close to the Federal standard of 1.0 mg/cm^2. The table below shows the mean and standard deviation of actual reading times by reading level for paint samples during the November 2015 archive testing. The tested instruments reported readings to one decimal place. No significant differences in reading times by substrate were observed. These times apply only to instruments with the same source strength as those tested (2.0 mCi). Instruments with stronger sources will have shorter reading times and those with weaker sources, longer reading times, than those in the table.

Mean and Standard Deviation of Reading Times in Action Level Mode by Reading Level		
Reading (mg/cm^2)	**Mean Reading Time (seconds)**	**Standard Deviation (seconds)**
< 0.7	3.48	0.47
0.7	7.29	1.92
0.8	13.95	1.78
0.9 – 1.2	15.25	0.66
1.3 – 1.4	6.08	2.50
≥ 1.5	3.32	0.05

CLASSIFICATION OF RESULTS:

XRF results are classified as **positive** if they are **greater than or equal** to the stated threshold for the instrument (1.0 mg/cm^2), and *negative* if they are *less than* the threshold.

DOCUMENTATION:

A report titled *Methodology for XRF Performance Characteristic Sheets* (EPA 747-R-95-008) provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. The report may be downloaded at http://www2.epa.gov/lead/methodology-xrf-performance-characteristic-sheets-epa-747-r-95-008-september-1997.

This XRF Performance Characteristic Sheet (PCS) was developed by QuanTech, Inc., under a contract with the XRF manufacturer.

www.nortolpr.com | info@nortolpr.com | 787.420.0220
PO Box 366457, San Juan, PR 00936-6457

ASBESTOS-CONTAINING MATERIALS SURVEY

CRP-000845 CABO ROJO REHABILITACIÓN DE LA INFRAESTRUCTURA DEL CENTRO URBANO

49 Cll Betances,

Cabo Rojo, Puerto Rico 00623

Inspection Date: May 1, 2025

Prepared for: BR&A, LLC

Prepared by: Nortol Environmental & Occupational Safety, Inc.

Inspector:

Sixto Suárez
Asbestos Inspector
ASB-1024-0484-SI

NORTOL *has performed this survey in a thorough and professional manner consistent with commonly accepted industry standards.*

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- Sampling Procedures
- Regulatory Review
- Survey Areas – Extent of Survey Coverage
- Findings

Conclusion 7

Attachment 1 – Inspector's Credentials

Attachment 2 – Representative Pictures\Photograph Log

Attachment 3 – Certification for Non-Presence Asbestos (PGC-009)

Acronyms

A/C	=	Air Conditioning
ACM	=	Asbestos-containing Material
ACBM	=	Asbestos-containing Building Material
AHERA	=	Asbestos Hazard Emergency Response Act
ASHARA	=	Asbestos School Hazard Abatement and Reauthorization Act
CFR	=	Code of Federal Regulations
CPSC	=	Consumer Product Safety Commission
EPA	=	Environmental Protection Agency
Ft2	=	square feet
HA	=	Homogeneous Area
HUD	=	Department of Housing and Urban Development
LF	=	Linear Feet
mg/cm2	=	milligrams per square centimeter
NESHAP'S	=	National Emission Standards for Hazardous Air Pollutants
NIOSH	=	National Institute for Occupational Safety and Health
OSHA	=	Occupational Safety and Health Administration
PLM	=	Polarized Light Microscopy
PRDOH	=	Puerto Rico Department of Housing
PRDNER	=	Puerto Rico Department of Natural and Environmental Resources
SACM	=	Suspect ACM
SOW	=	Scope of Work
TSI	=	Thermal System Insulation
VFT	=	Vinyl floor tiles

I. INTRODUCTION

As part of the environmental due diligence, this survey is intended to assess the general presence, quantity, and location of suspected asbestos-containing materials (SACM) at *CRP-000845 Cabo Rojo Rehabilitación de La Infraestructura del Centro Urbano* project located at *49 Cll Betances, Cabo Rojo, P.R. 00623*.

The SACM survey was conducted on November 26, 2024, by Mr. Sixto Suárez (ACM inspector num. ASB-1024-0484-SI) from Nortol. Inspector's credential(s) is included in **Attachment 1.** Nortol's survey areas and report are limited to the details provided in Section II part D.

Nortol did not identify suspect materials at the reference structure, hence no bulk samples were collected nor sent to the laboratory for analysis. In addition, no suspect material was observed during the visual assessment that needed to be assumed as ACM.

There is concrete and metal structural components. The floors have bricks tiles, bare concrete.

II. ASBESTOS SURVEY REPORT

A. Survey Protocol:

This activity was conducted following the latest protocol for assessing materials suspected of containing asbestos as defined by the U.S. Environmental Protection Agency (EPA). It involved a visual walk-through inspection of the accessible areas of the building to develop an inventory of suspect ACM homogeneous materials. When applied, during the sampling activities, suspected ACM are touched and observed by the inspector to determine its friability and physical condition. A friable material is defined as a material that when dry, can be crumbled, or reduced to powder by hand pressure. The friability of a material causally relates to the potential of the asbestos fibers to be released. The inspector assessed the suspect ACM according to their physical condition and potential damage.

B. Sampling Procedure:

When applied, the technique used for sampling the suspected accessible materials is designed to minimize possible fiber release and in turn possible contamination of surrounding areas. Representative suspected material samples are collected in accordance with the EPA's AHERA/ASHARA guidelines and procedures presented in the *Guide for Controlling Asbestos Containing Materials in Building (EPA 560-6-85-024, June 1985)* and characterized following the *National Emission Standard for Hazardous Air Pollution (NESHAP)*, subpart M-Asbestos, 40 CFR Part 61-Standard for Demolition and Renovation. Samples of the homogeneous accessible

materials are collected in quantities enough to determine asbestos content, and then placed in airtight bags. The bagged samples are properly collected, labeled, and identified. A Chain of Custody form is completed for collected bulk samples which are analyzed by an independent laboratory using PLM method. The laboratory utilizes dispersion staining techniques according to US EPA method 600/M4-82-020 incorporating visual estimates of identified material percentages.

C. Regulatory Review:

According to NESHAP's standards (40 CFR 61.141), Asbestos Containing Building Materials are classified into three categories: Category I - Nonfriable asbestos-containing material (ACM), Category II – other Nonfriable ACM, and Regulated asbestos-containing material (RACM). ACMs are classified into three categories according to EPA-AHERA/ASHARA's standards (40 CFR Part 763): Surfacing material, Thermal System Insulation (TSI) and Miscellaneous material.

Once the inspector has identified the ACM in a building, he or she must perform a physical assessment of TSI and friable material. Under § 763.88 of the AHERA Rule, the physical assessment of ACBM involve classifying the material into one of the following seven Categories: Damaged or significantly damaged TSI ACM; Damaged friable surfacing ACM; Significantly damaged friable surfacing ACM; Damaged or significantly damaged friable miscellaneous ACM; ACBM with potential for damage; ACBM with potential for significant damage; and Any remaining friable ACBM or friable suspected ACBM.

The PRDNER- former Environmental Quality Board (Regulation for the Control of Atmospheric Pollution-Rule 422) enacted in 1995, required all commercial and public building, including industries to identify asbestos containing building materials in their structures and take appropriate actions to control the release of asbestos fiber. Asbestos inspection is part of the permitting application process for any future project in the buildings which may include renovation or demolition activities regulated by the PR State/Municipal Offices. To obtain demolition permits in Puerto Rico is necessary to include a certification (OGP-PGC-009 or equivalent) stating that there is no asbestos containing material in the project.

D. Survey Areas – Extent of Survey Coverage:

The survey included a detailed structure inspection providing a general sense of the overall location, type, quantity, and condition of potential ACMs present. The survey was thorough in the interior or exterior accessible functional spaces, and bulk samples (if applied) are taken from the observed suspect materials. The presence of asbestos in suspect materials (if applied) is assumed or presumed in some cases without bulk samples being collected or analyzed (when applicable). This is necessary for locations where materials are inaccessible or areas that are

unsafe to access (e.g., elevated heights, energized equipment, confined spaces, etc.). For those areas that were not safely accessible, suspect materials observed or presumed to be present (if applied) were documented and assumed as ACMs. The survey did not include destructive, intrusive and/or exploratory testing.

Areas Not Included in Survey and Service Constraints: All professional opinions presented in this report are based on information made available either by review of data provided by others or data gathered by Nortol personnel. Nortol affirms that data gathered and presented by Nortol in this report was collected in an appropriate manner in accordance with accepted methods and practices. Any energized utilities/services, including electricity, water and heat were assumed to be active. Materials associated with these items were determined to not be safely accessible and were not sampled. Suspect ACMs associated with these items should be assumed ACM until the systems can be de-energized and safely sampled. The survey did not include access or inspection of confined spaces or subsurface/underground areas including piping, conduits, building footings and soils (surficial or otherwise).

E. Findings

Nortol did not identify SACM at the reference structure, therefore no bulk samples were collected and/or sent to the laboratory for analysis. In addition, no suspect material was observed during the visual assessment that needed to be assumed as ACM.

Representative Pictures\Photograph Log of the structure are provided in **Attachment 2**. Certification for non-presence of asbestos is provided in **Attachment 3**.

III. CONCLUSION

ACM survey was conducted for the project identified with the header ID. Nortol did not identify SACM at the referenced structure, hence no bulk samples were collected and/or sent to the laboratory for analysis. In addition, no suspect material was observed during the visual assessment that needed to be assumed as ACM.

Any conditions or materials that could not be visually identified or were out-of-the SOW, were not inspected and may differ from those conditions or materials noted. It was not within the scope of the activity to remove surface materials to investigate portions of the structure or materials that may lay beneath the surface. Nortol's selection of sample locations and frequency of sampling was based on Nortol's observations and the assumption that similar materials in the same area are homogeneous in content.

The report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos or lead abatement contractors in locating ACM. Under no circumstances is the report to be utilized solely as a bidding document or as a project specification document.

Attachment 1

Inspector's Credential

SIXTO SUAREZ
Puerto Rico
Asbestos Inspector

TARJETA DE REGISTRO
PARA LA REMOCION DE ASBESTO

Esta tarjeta autoriza a:

Sixto Suárez Cintrón

Inspector

A trabajar en la remoción de asbesto en Puerto Rico. Esta persona **NO** es un empleado del DRNA.

ASB-1024-0484-SI

Número de Registro

22-oct-2025

Fecha de vencimiento

Firma Autorizada - Departamento Recursos Naturales y Ambientales

Attachment 2

Representative Pictures\Photograph Log

Sixto Suárez

NORTOL. Environmental & Occupational Safety, Inc.

CRP-000845 CABO ROJO REHABILITACIÓN DE LA INFRAESTRUCTURA DEL CENTRO URBANO - ACM SURVEY PHOTO LOG

Built circa: Not available at the moment of the inspection

Thursday, May 1, 2025

Prepared For BR&A, LLC

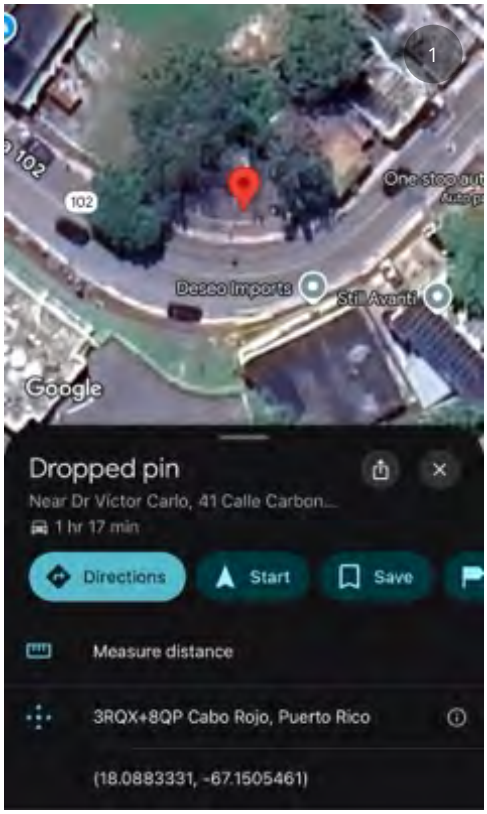
49 CII BETANCES CABO ROJO, P.R. 00623

FRONT VIEW:

(18.0883331, -67.1505461)

LOCATION:

(18.0883331, -67.1505461)



SCOPE OF WORK:

Full Inspection A/L

Job Id: LBP/ASB-2025-328

EXTERIOR GENERAL VIEWS:

IS THERE ANY AREA WITHOUT ACCESS?

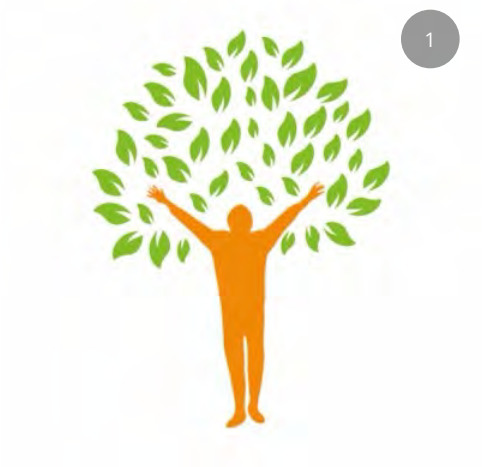
No.

IS THERE ANY VISIBLE INDICATION OF MOLD?

Yes, mold was found visible at the moment of the inspection.

ARE THERE SIGNS OF POOR HOUSEKEEPING ON SITE? (MOUNDS OF RUBBLE, GARBAGE, STORM DEBRIS, SOLID WASTE, PETROLEUM PRODUCTS, PAINT, PESTICIDES, CLEANING FLUIDS, VEHICLE BATTERIES, ABANDONED VEHICLES, PITS, POOLS, PONDS OF HAZARDOUS SUBSTANCES, ETC.)

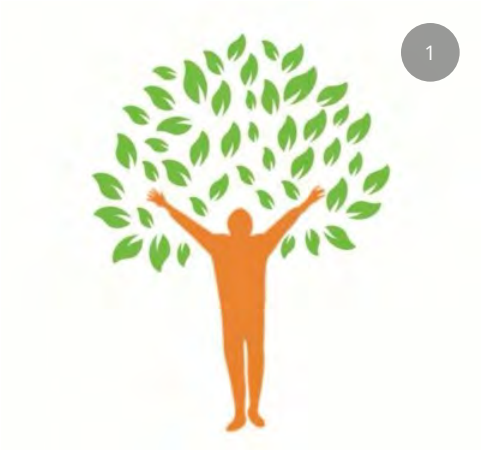
Not found at the moment of the inspection.



1

ARE ANY ADDITIONAL SITE HAZARDS OBSERVED?

Not found at the moment of the inspection.



1

SACM VISIBLE?

No SACM visible at the moment of the inspection.

Attachment 3

Certification for Non-Presence Asbestos (PGC-009)

CERTIFICACION DE NO PRESENCIA DE ASBESTO EN ESTRUCTURAS A DEMOLERSE

(Deberá completarse en letra de molde o impresa)

SUBMITTED AS SEPARATE DOCUMENT

www.nortolpr.com | info@nortolpr.com | 787.420.0220
PO Box 366457, San Juan, PR 00936-6457

Appendix C

NEPAssist Identified Facilities within 3,000 ft

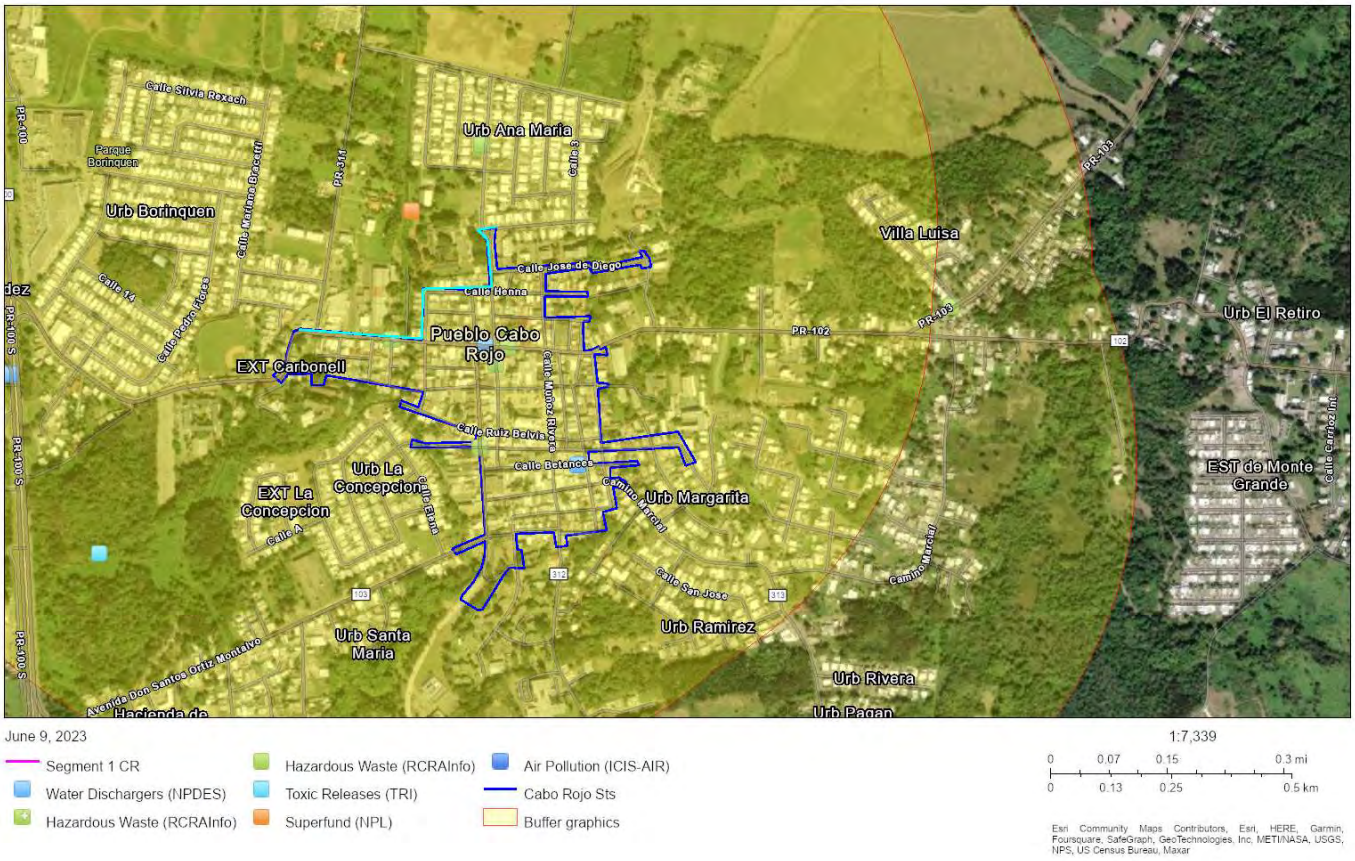
Report Prepared on August 2023

NEPAssist

Home | Help

Segment 1 CR

Map



Geographic coordinates:

LINE
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with buffer 3000 feet

Note: The information in the following reports is based on publicly available databases and web services. The National Report uses nationally available datasets and the State Reports use datasets available through the EPA Regions. Click on the hyperlinked question to view the data source and associated metadata.

National Report

Length of digitized line	0.41 mi
Within 3000 feet of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Federal Land?	no
Within 3000 feet of an impaired stream?	no

Within 3000 feet of an impaired waterbody?	yes
Within 3000 feet of a waterbody?	yes
Within 3000 feet of a stream?	yes
Within 3000 feet of an NWI wetland?	click here ***May take several minutes***
Within 3000 feet of a Brownfields site?	no
Within 3000 feet of a Superfund site?	yes
Within 3000 feet of a Toxic Release Inventory (TRI) site?	yes
Within 3000 feet of a water discharger (NPDES)?	yes
Within 3000 feet of a hazardous waste (RCRA) facility?	yes
Within 3000 feet of an air emission facility?	yes
Within 3000 feet of a school?	yes
Within 3000 feet of an airport?	no
Within 3000 feet of a hospital?	no
Within 3000 feet of a designated sole source aquifer?	no
Within 3000 feet of a historic property on the National Register of Historic Places?	no
Within 3000 feet of a Toxic Substances Control Act (TSCA) site?	no
Within 3000 feet of a Land Cession Boundary?	no
Within 3000 feet of a tribal area (lower 48 states)?	no
Within 3000 feet of the service area of a mitigation or conservation bank?	no
Within 3000 feet of the service area of an In-Lieu-Fee Program?	no
Within 3000 feet of a Public Property Boundary of the Formerly Used Defense Sites?	no
Within 3000 feet of a Munitions Response Site?	no
Within 3000 feet of an Essential Fish Habitat (EFH)?	no
Within 3000 feet of a Habitat Area of Particular Concern (HAPC)?	no
Within 3000 feet of an EFH Area Protected from Fishing (EFHA)?	yes
Within 3000 feet of a Bureau of Land Management Area of Critical Environmental Concern?	no
Within 3000 feet of an ESA-designated Critical Habitat Area per U.S. Fish & Wildlife Service?	no
Within 3000 feet of an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

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Segment 2 CR

Map

Geographic coordinates:

LINE
(18.088526,-67.150562,18.088474,-67.150658,18.088017,-67.150789,18.087938,-67.150776,18.087658,-67.151030,18.087514,-67.150865,18.087684,-67.150721,18.087664,-67.150274,18.087495,-67.150281,18.087488,-67.150055,18.087651,-67.150000)
with buffer 3000 feet

Note: The information in the following reports is based on publicly available databases and web services. The National Report uses nationally available datasets and the State Reports use datasets available through the EPA Regions. Click on the hyperlinked question to view the data source and associated metadata.

National Report

Length of digitized line	0.17 mi
Within 3000 feet of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Federal Land?	no
Within 3000 feet of an impaired stream?	no

Within 3000 feet of an impaired waterbody?	yes
Within 3000 feet of a waterbody?	no
Within 3000 feet of a stream?	yes
Within 3000 feet of an NWI wetland?	click here ***May take several minutes***
Within 3000 feet of a Brownfields site?	no
Within 3000 feet of a Superfund site?	yes
Within 3000 feet of a Toxic Release Inventory (TRI) site?	yes
Within 3000 feet of a water discharger (NPDES)?	yes
Within 3000 feet of a hazardous waste (RCRA) facility?	yes
Within 3000 feet of an air emission facility?	yes
Within 3000 feet of a school?	yes
Within 3000 feet of an airport?	no
Within 3000 feet of a hospital?	no
Within 3000 feet of a designated sole source aquifer?	no
Within 3000 feet of a historic property on the National Register of Historic Places?	no
Within 3000 feet of a Toxic Substances Control Act (TSCA) site?	no
Within 3000 feet of a Land Cession Boundary?	no
Within 3000 feet of a tribal area (lower 48 states)?	no
Within 3000 feet of the service area of a mitigation or conservation bank?	no
Within 3000 feet of the service area of an In-Lieu-Fee Program?	no
Within 3000 feet of a Public Property Boundary of the Formerly Used Defense Sites?	no
Within 3000 feet of a Munitions Response Site?	no
Within 3000 feet of an Essential Fish Habitat (EFH)?	no
Within 3000 feet of a Habitat Area of Particular Concern (HAPC)?	no
Within 3000 feet of an EFH Area Protected from Fishing (EFHA)?	yes
Within 3000 feet of a Bureau of Land Management Area of Critical Environmental Concern?	no
Within 3000 feet of an ESA-designated Critical Habitat Area per U.S. Fish & Wildlife Service?	no
Within 3000 feet of an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

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Segment 3 CR

Map

Geographic coordinates:

LINE
(18.087664,-67.150000,18.087351,-67.148098,18.087077,-67.148201,18.087207,-67.148530,18.087083,-67.148551,18.086581,-67.147047,18.086437,-67.147088,18.086411,-67.148105,18.086509,-67.148311,18.086333,-67.148338,18.086313,-67.147047,18.086313,-67.147020)
with buffer 3000 feet

Note: The information in the following reports is based on publicly available databases and web services. The National Report uses nationally available datasets and the State Reports use datasets available through the EPA Regions. Click on the hyperlinked question to view the data source and associated metadata.

National Report

Length of digitized line	0.48 mi
Within 3000 feet of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Federal Land?	no
Within 3000 feet of an impaired stream?	no

Within 3000 feet of an impaired waterbody?	yes
Within 3000 feet of a waterbody?	yes
Within 3000 feet of a stream?	yes
Within 3000 feet of an NWI wetland?	click here ***May take several minutes***
Within 3000 feet of a Brownfields site?	no
Within 3000 feet of a Superfund site?	yes
Within 3000 feet of a Toxic Release Inventory (TRI) site?	yes
Within 3000 feet of a water discharger (NPDES)?	yes
Within 3000 feet of a hazardous waste (RCRA) facility?	yes
Within 3000 feet of an air emission facility?	yes
Within 3000 feet of a school?	yes
Within 3000 feet of an airport?	no
Within 3000 feet of a hospital?	no
Within 3000 feet of a designated sole source aquifer?	no
Within 3000 feet of a historic property on the National Register of Historic Places?	no
Within 3000 feet of a Toxic Substances Control Act (TSCA) site?	no
Within 3000 feet of a Land Cession Boundary?	no
Within 3000 feet of a tribal area (lower 48 states)?	no
Within 3000 feet of the service area of a mitigation or conservation bank?	no
Within 3000 feet of the service area of an In-Lieu-Fee Program?	no
Within 3000 feet of a Public Property Boundary of the Formerly Used Defense Sites?	no
Within 3000 feet of a Munitions Response Site?	no
Within 3000 feet of an Essential Fish Habitat (EFH)?	no
Within 3000 feet of a Habitat Area of Particular Concern (HAPC)?	no
Within 3000 feet of an EFH Area Protected from Fishing (EFHA)?	yes
Within 3000 feet of a Bureau of Land Management Area of Critical Environmental Concern?	no
Within 3000 feet of an ESA-designated Critical Habitat Area per U.S. Fish & Wildlife Service?	no
Within 3000 feet of an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

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Segment 4 CR

Map

Geographic coordinates:

LINE
(18.086317,-67.147033,18.084698,-67.146923,18.084443,-67.147500,18.084326,-67.147417,18.084561,-67.146854,18.084228,-67.146888,18.084058,-67.146971,18.083810,-67.147108,18.083517,-67.147376,18.083275,-67.146985,18.083275,-67.146964,18.083301,-67.146943,18.084071,-67.146428,18.084071,-67.146099)
with buffer 3000 feet

Note: The information in the following reports is based on publicly available databases and web services. The National Report uses nationally available datasets and the State Reports use datasets available through the EPA Regions. Click on the hyperlinked question to view the data source and associated metadata.

National Report

Length of digitized line	0.40 mi
Within 3000 feet of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Federal Land?	no

Within 3000 feet of an impaired stream?	no
Within 3000 feet of an impaired waterbody?	yes
Within 3000 feet of a waterbody?	yes
Within 3000 feet of a stream?	yes
Within 3000 feet of an NWI wetland?	click here ***May take several minutes***
Within 3000 feet of a Brownfields site?	no
Within 3000 feet of a Superfund site?	yes
Within 3000 feet of a Toxic Release Inventory (TRI) site?	yes
Within 3000 feet of a water discharger (NPDES)?	yes
Within 3000 feet of a hazardous waste (RCRA) facility?	yes
Within 3000 feet of an air emission facility?	yes
Within 3000 feet of a school?	yes
Within 3000 feet of an airport?	no
Within 3000 feet of a hospital?	no
Within 3000 feet of a designated sole source aquifer?	no
Within 3000 feet of a historic property on the National Register of Historic Places?	no
Within 3000 feet of a Toxic Substances Control Act (TSCA) site?	no
Within 3000 feet of a Land Cession Boundary?	no
Within 3000 feet of a tribal area (lower 48 states)?	no
Within 3000 feet of the service area of a mitigation or conservation bank?	no
Within 3000 feet of the service area of an In-Lieu-Fee Program?	no
Within 3000 feet of a Public Property Boundary of the Formerly Used Defense Sites?	no
Within 3000 feet of a Munitions Response Site?	no
Within 3000 feet of an Essential Fish Habitat (EFH)?	no
Within 3000 feet of a Habitat Area of Particular Concern (HAPC)?	no
Within 3000 feet of an EFH Area Protected from Fishing (EFHA)?	yes
Within 3000 feet of a Bureau of Land Management Area of Critical Environmental Concern?	no
Within 3000 feet of an ESA-designated Critical Habitat Area per U.S. Fish & Wildlife Service?	no
Within 3000 feet of an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

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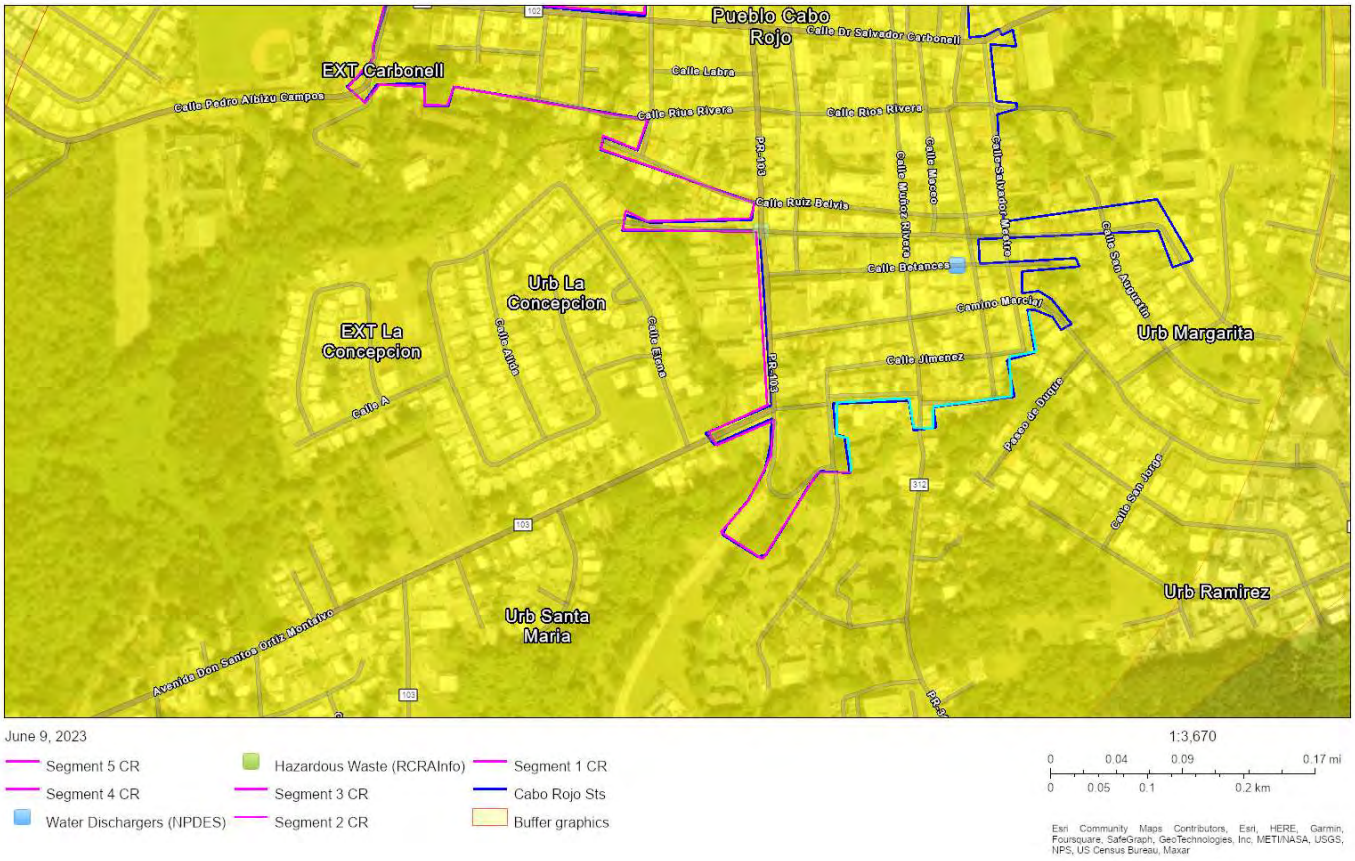
Segment 5 CR

Map



Geographic coordinates:

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with buffer 3000 feet

Note: The information in the following reports is based on publicly available databases and web services. The National Report uses nationally available datasets and the State Reports use datasets available through the EPA Regions. Click on the hyperlinked question to view the data source and associated metadata.

National Report

Length of digitized line	0.26 mi
Within 3000 feet of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Federal Land?	no
Within 3000 feet of an impaired stream?	no

Within 3000 feet of an impaired waterbody?	yes
Within 3000 feet of a waterbody?	yes
Within 3000 feet of a stream?	yes
Within 3000 feet of an NWI wetland?	click here ***May take several minutes***
Within 3000 feet of a Brownfields site?	no
Within 3000 feet of a Superfund site?	yes
Within 3000 feet of a Toxic Release Inventory (TRI) site?	yes
Within 3000 feet of a water discharger (NPDES)?	yes
Within 3000 feet of a hazardous waste (RCRA) facility?	yes
Within 3000 feet of an air emission facility?	yes
Within 3000 feet of a school?	yes
Within 3000 feet of an airport?	no
Within 3000 feet of a hospital?	no
Within 3000 feet of a designated sole source aquifer?	no
Within 3000 feet of a historic property on the National Register of Historic Places?	no
Within 3000 feet of a Toxic Substances Control Act (TSCA) site?	no
Within 3000 feet of a Land Cession Boundary?	no
Within 3000 feet of a tribal area (lower 48 states)?	no
Within 3000 feet of the service area of a mitigation or conservation bank?	no
Within 3000 feet of the service area of an In-Lieu-Fee Program?	no
Within 3000 feet of a Public Property Boundary of the Formerly Used Defense Sites?	no
Within 3000 feet of a Munitions Response Site?	no
Within 3000 feet of an Essential Fish Habitat (EFH)?	no
Within 3000 feet of a Habitat Area of Particular Concern (HAPC)?	no
Within 3000 feet of an EFH Area Protected from Fishing (EFHA)?	yes
Within 3000 feet of a Bureau of Land Management Area of Critical Environmental Concern?	no
Within 3000 feet of an ESA-designated Critical Habitat Area per U.S. Fish & Wildlife Service?	no
Within 3000 feet of an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

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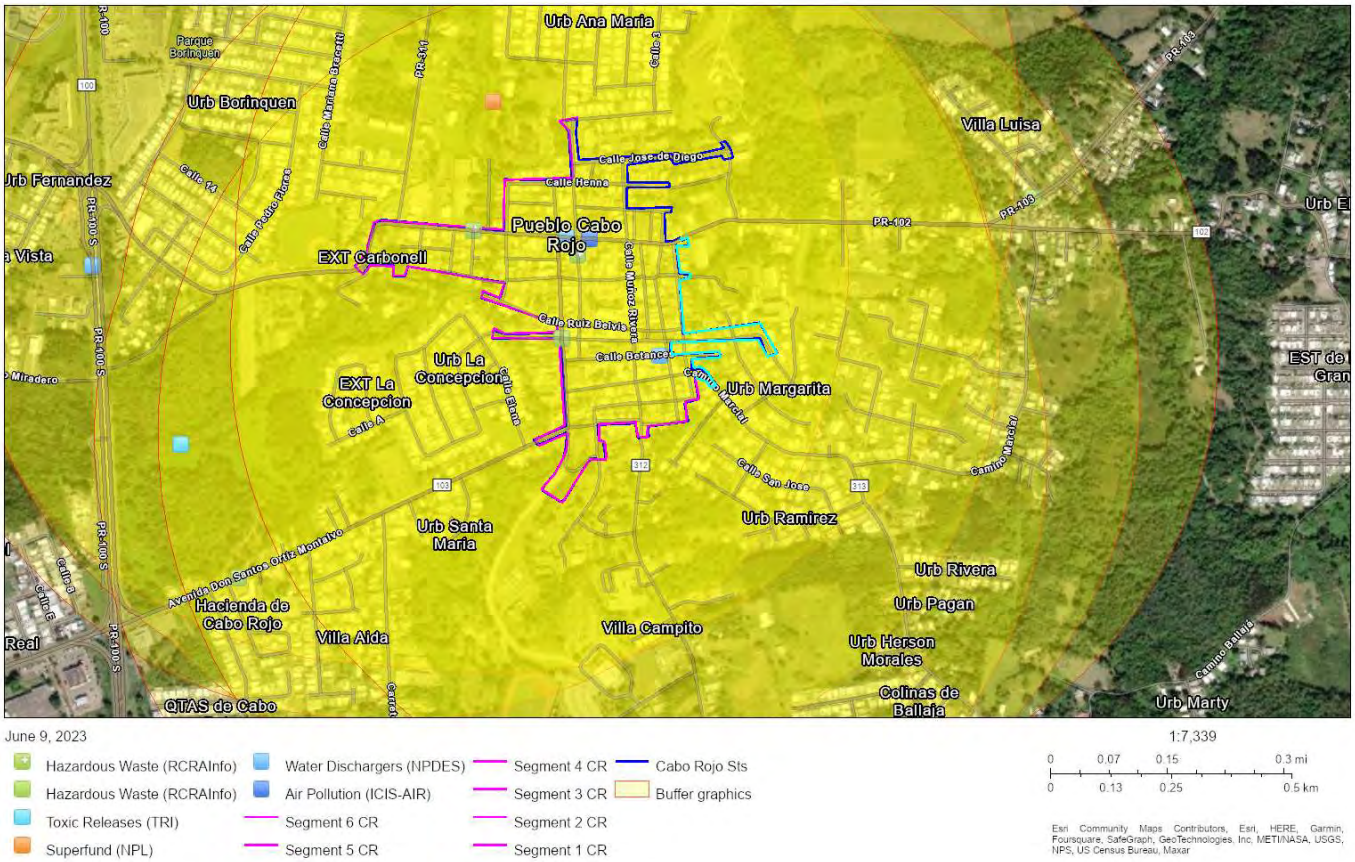
Segment 6 CR

Map



Geographic coordinates:

LINE
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with buffer 3000 feet

Note: The information in the following reports is based on publicly available databases and web services. The National Report uses nationally available datasets and the State Reports use datasets available through the EPA Regions. Click on the hyperlinked question to view the data source and associated metadata.

National Report

Length of digitized line	0.67 mi
Within 3000 feet of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no

Within 3000 feet of a Federal Land?	no
Within 3000 feet of an impaired stream?	no
Within 3000 feet of an impaired waterbody?	yes
Within 3000 feet of a waterbody?	yes
Within 3000 feet of a stream?	yes
Within 3000 feet of an NWI wetland?	click here ***May take several minutes***
Within 3000 feet of a Brownfields site?	no
Within 3000 feet of a Superfund site?	yes
Within 3000 feet of a Toxic Release Inventory (TRI) site?	yes
Within 3000 feet of a water discharger (NPDES)?	yes
Within 3000 feet of a hazardous waste (RCRA) facility?	yes
Within 3000 feet of an air emission facility?	yes
Within 3000 feet of a school?	yes
Within 3000 feet of an airport?	no
Within 3000 feet of a hospital?	no
Within 3000 feet of a designated sole source aquifer?	no
Within 3000 feet of a historic property on the National Register of Historic Places?	no
Within 3000 feet of a Toxic Substances Control Act (TSCA) site?	no
Within 3000 feet of a Land Cession Boundary?	no
Within 3000 feet of a tribal area (lower 48 states)?	no
Within 3000 feet of the service area of a mitigation or conservation bank?	no
Within 3000 feet of the service area of an In-Lieu-Fee Program?	no
Within 3000 feet of a Public Property Boundary of the Formerly Used Defense Sites?	no
Within 3000 feet of a Munitions Response Site?	no
Within 3000 feet of an Essential Fish Habitat (EFH)?	no
Within 3000 feet of a Habitat Area of Particular Concern (HAPC)?	no
Within 3000 feet of an EFH Area Protected from Fishing (EFHA)?	yes
Within 3000 feet of a Bureau of Land Management Area of Critical Environmental Concern?	no
Within 3000 feet of an ESA-designated Critical Habitat Area per U.S. Fish & Wildlife Service?	no
Within 3000 feet of an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

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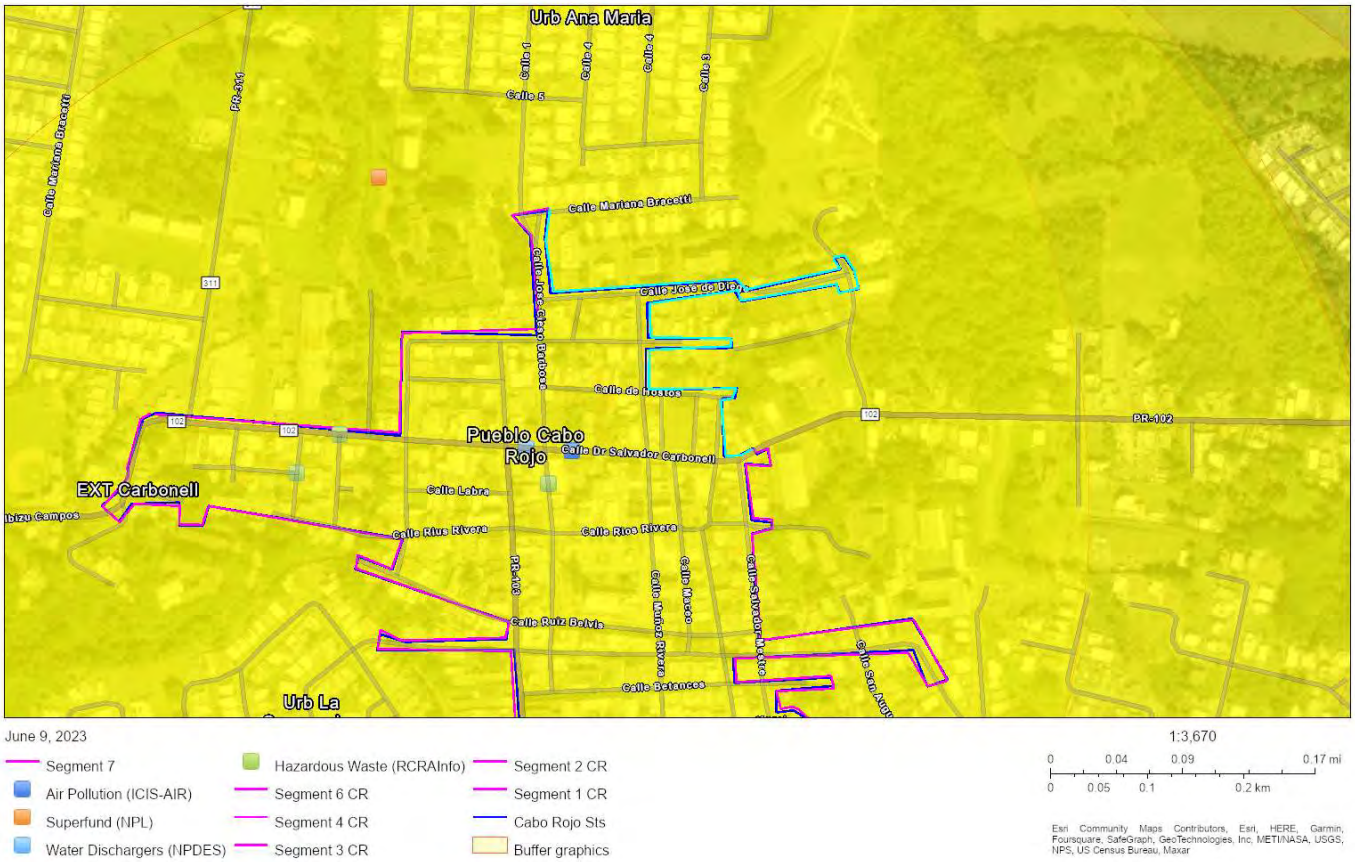
Segment 7

Map



Geographic coordinates:

LINE
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with buffer 3000 feet

Note: The information in the following reports is based on publicly available databases and web services. The National Report uses nationally available datasets and the State Reports use datasets available through the EPA Regions. Click on the hyperlinked question to view the data source and associated metadata.

National Report

Length of digitized line	0.71 mi
Within 3000 feet of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no

Within 3000 feet of a Federal Land?	no
Within 3000 feet of an impaired stream?	no
Within 3000 feet of an impaired waterbody?	yes
Within 3000 feet of a waterbody?	yes
Within 3000 feet of a stream?	yes
Within 3000 feet of an NWI wetland?	click here ***May take several minutes***
Within 3000 feet of a Brownfields site?	no
Within 3000 feet of a Superfund site?	yes
Within 3000 feet of a Toxic Release Inventory (TRI) site?	no
Within 3000 feet of a water discharger (NPDES)?	yes
Within 3000 feet of a hazardous waste (RCRA) facility?	yes
Within 3000 feet of an air emission facility?	yes
Within 3000 feet of a school?	no
Within 3000 feet of an airport?	no
Within 3000 feet of a hospital?	no
Within 3000 feet of a designated sole source aquifer?	no
Within 3000 feet of a historic property on the National Register of Historic Places?	no
Within 3000 feet of a Toxic Substances Control Act (TSCA) site?	no
Within 3000 feet of a Land Cession Boundary?	no
Within 3000 feet of a tribal area (lower 48 states)?	no
Within 3000 feet of the service area of a mitigation or conservation bank?	no
Within 3000 feet of the service area of an In-Lieu-Fee Program?	no
Within 3000 feet of a Public Property Boundary of the Formerly Used Defense Sites?	no
Within 3000 feet of a Munitions Response Site?	no
Within 3000 feet of an Essential Fish Habitat (EFH)?	no
Within 3000 feet of a Habitat Area of Particular Concern (HAPC)?	no
Within 3000 feet of an EFH Area Protected from Fishing (EFHA)?	yes
Within 3000 feet of a Bureau of Land Management Area of Critical Environmental Concern?	no
Within 3000 feet of an ESA-designated Critical Habitat Area per U.S. Fish & Wildlife Service?	no
Within 3000 feet of an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

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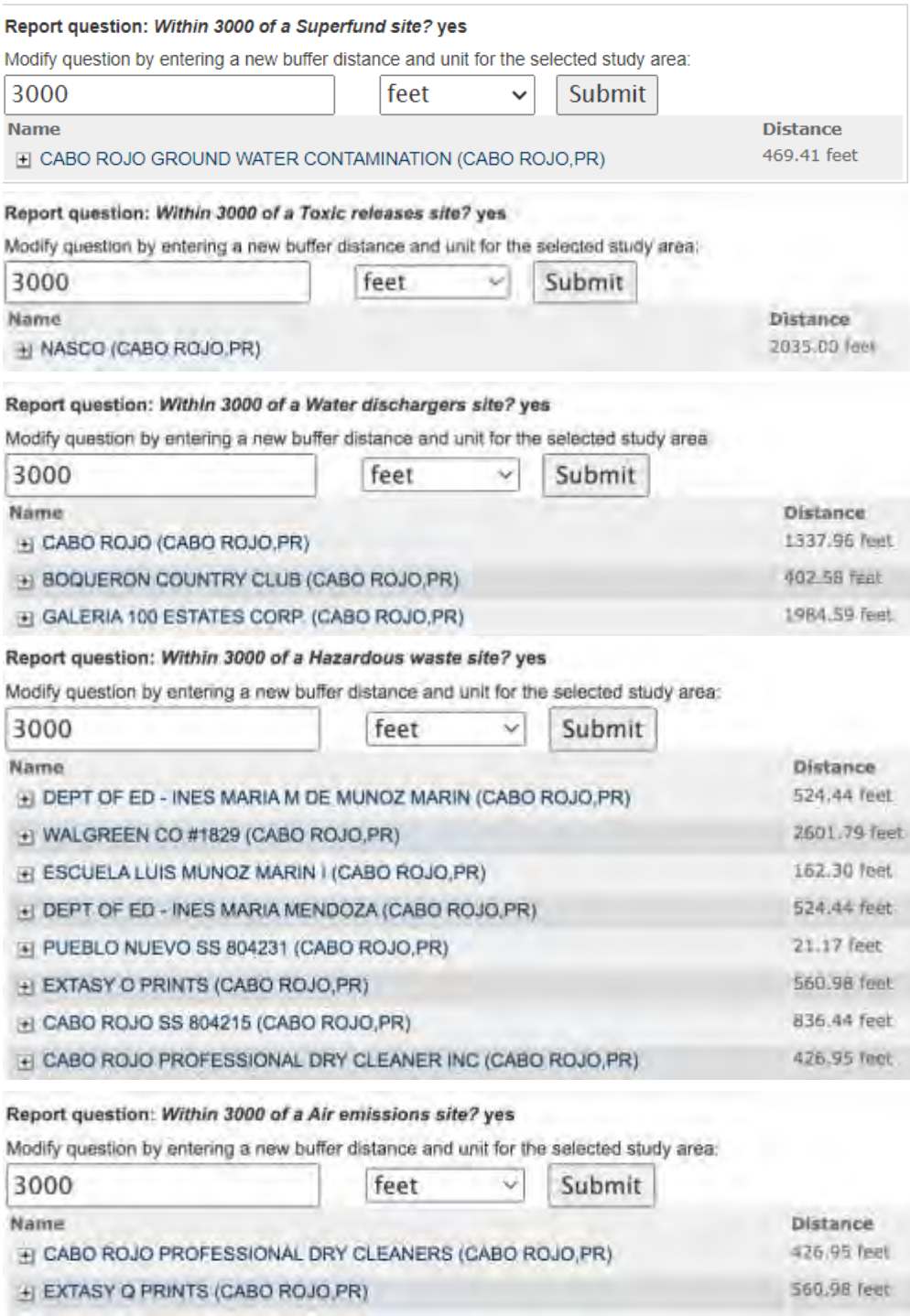
PR-CRP-000845 – Rehabilitación de la Infraestructura del Centro Urbano

Segment #1



Report question: ***Within 3000 of a Superfund site?*** **yes**

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
CABO ROJO GROUND WATER CONTAMINATION (CABO ROJO,PR)	469.41 feet

Report question: ***Within 3000 of a Toxic releases site?*** **yes**

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
NASCO (CABO ROJO,PR)	2035.00 feet

Report question: ***Within 3000 of a Water dischargers site?*** **yes**

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
CABO ROJO (CABO ROJO,PR)	1337.96 feet
BOQUERON COUNTRY CLUB (CABO ROJO,PR)	402.58 feet
GALERIA 100 ESTATES CORP. (CABO ROJO,PR)	1984.59 feet

Report question: ***Within 3000 of a Hazardous waste site?*** **yes**

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
DEPT OF ED - INES MARIA M DE MUNOZ MARIN (CABO ROJO,PR)	524.44 feet
WALGREEN CO #1829 (CABO ROJO,PR)	2601.79 feet
ESCUELA LUIS MUNOZ MARIN I (CABO ROJO,PR)	162.30 feet
DEPT OF ED - INES MARIA MENDOZA (CABO ROJO,PR)	524.44 feet
PUEBLO NUEVO SS 804231 (CABO ROJO,PR)	21.17 feet
EXTASY O PRINTS (CABO ROJO,PR)	560.98 feet
CABO ROJO SS 804215 (CABO ROJO,PR)	836.44 feet
CABO ROJO PROFESSIONAL DRY CLEANER INC (CABO ROJO,PR)	426.95 feet

Report question: ***Within 3000 of a Air emissions site?*** **yes**

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
CABO ROJO PROFESSIONAL DRY CLEANERS (CABO ROJO,PR)	426.95 feet
EXTASY Q PRINTS (CABO ROJO,PR)	560.98 feet

***Note: The site was divided into segments in the NEPAssist website to be able to retrieve the information of the environmental reports the website provides, since due to the large area of impact of the project, NEPAssist could not produce a report when taken together.**

Segment #2

Report question: *Within 3000 of a Superfund site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
CABO ROJO GROUND WATER CONTAMINATION (CABO ROJO,PR)	1114.07 feet

Report question: *Within 3000 of a Toxic releases site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
NASCO (CABO ROJO,PR)	1888.07 feet

Report question: *Within 3000 of a Water dischargers site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
CABO ROJO (CABO ROJO,PR)	1815.16 feet
BOQUERON COUNTRY CLUB (CABO ROJO,PR)	1100.35 feet
GALERIA 100 ESTATES CORP. (CABO ROJO,PR)	1786.81 feet

Report question: *Within 3000 of a Hazardous waste site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
DEPT OF ED - INES MARIA M DE MUNOZ MARIN (CABO ROJO,PR)	1160.25 feet
WALGREEN CO #1829 (CABO ROJO,PR)	2220.18 feet
ESCUELA LUIS MUNOZ MARIN I (CABO ROJO,PR)	323.58 feet
DEPT OF ED - INES MARIA MENDOZA (CABO ROJO,PR)	1160.25 feet
PUEBLO NUEVO SS 804231 (CABO ROJO,PR)	511.37 feet
EXTASY O PRINTS (CABO ROJO,PR)	1765.97 feet
CABO ROJO SS 804215 (CABO ROJO,PR)	1149.05 feet
CABO ROJO PROFESSIONAL DRY CLEANER INC (CABO ROJO,PR)	1253.06 feet

Report question: *Within 3000 of a Air emissions site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
CABO ROJO PROFESSIONAL DRY CLEANERS (CABO ROJO,PR)	1253.06 feet
EXTASY O PRINTS (CABO ROJO,PR)	1765.97 feet

Segment #3

Report question: *Within 3000 of a Superfund site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
CABO ROJO GROUND WATER CONTAMINATION (CABO ROJO,PR)	1194.08 feet

Report question: *Within 3000 of a Toxic releases site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
CUTLER HAMMER ELECTRICAL CO (CABO ROJO,PR)	2801.08 feet
NASCO (CABO ROJO,PR)	1957.29 feet

Report question: *Within 3000 of a Water dischargers site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
CABO ROJO (CABO ROJO,PR)	688.40 feet
BOQUERON COUNTRY CLUB (CABO ROJO,PR)	522.30 feet
GALERIA 100 ESTATES CORP. (CABO ROJO,PR)	2144.50 feet

Report question: *Within 3000 of a Hazardous waste site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
DEPT OF ED - INES MARIA M DE MUNOZ MARIN (CABO ROJO,PR)	485.76 feet
WALGREEN CO #1829 (CABO ROJO,PR)	2369.13 feet
ESCUELA LUIS MUNOZ MARIN I (CABO ROJO,PR)	160.74 feet
DEPT OF ED - INES MARIA MENDOZA (CABO ROJO,PR)	485.76 feet
PUEBLO NUEVO SS 804231 (CABO ROJO,PR)	314.31 feet
EXTASY O PRINTS (CABO ROJO,PR)	1717.96 feet
CUTLER HAMMER - EATON (CABO ROJO,PR)	2801.08 feet
CABO ROJO SS 804215 (CABO ROJO,PR)	14.12 feet
CABO ROJO PROFESSIONAL DRY CLEANER INC (CABO ROJO,PR)	617.41 feet

Report question: *Within 3000 of a Air emissions site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 | feet | Submit

Name	Distance
CABO ROJO PROFESSIONAL DRY CLEANERS (CABO ROJO,PR)	617.41 feet
EXTASY Q PRINTS (CABO ROJO,PR)	1717.96 feet

Segment #4

Report question: *Within 3000 of a Superfund site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CABO ROJO GROUND WATER CONTAMINATION (CABO ROJO,PR)	1662.37 feet

Report question: *Within 3000 of a Toxic releases site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CUTLER HAMMER ELECTRICAL CO (CABO ROJO,PR)	1973.75 feet
CABO ROJO WOOD TREATING PLANT CORP (CABO ROJO,PR)	2846.60 feet
NASCO (CABO ROJO,PR)	2411.83 feet

Report question: *Within 3000 of a Water dischargers site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CABO ROJO (CABO ROJO,PR)	674.56 feet
BOQUERON COUNTRY CLUB (CABO ROJO,PR)	685.73 feet

Report question: *Within 3000 of a Hazardous waste site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
DEPT OF ED - INES MARIA M DE MUNOZ MARIN (CABO ROJO,PR)	578.44 feet
WALGREEN CO #1829 (CABO ROJO,PR)	2145.82 feet
ESCUELA LUIS MUNOZ MARIN I (CABO ROJO,PR)	943.75 feet
DEPT OF ED - INES MARIA MENDOZA (CABO ROJO,PR)	578.44 feet
PUEBLO NUEVO SS 804231 (CABO ROJO,PR)	934.62 feet
EXTASY O PRINTS (CABO ROJO,PR)	2047.13 feet
CUTLER HAMMER - EATON (CABO ROJO,PR)	1973.75 feet
CABO ROJO WOOD TREATING PLT CORP (CABO ROJO,PR)	2846.60 feet
CABO ROJO SS 804215 (CABO ROJO,PR)	18.44 feet
CABO ROJO PROFESSIONAL DRY CLEANER INC (CABO ROJO,PR)	706.73 feet

Report question: *Within 3000 of a Air emissions site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CABO ROJO PROFESSIONAL DRY CLEANERS (CABO ROJO,PR)	706.73 feet
EXTASY Q PRINTS (CABO ROJO,PR)	2047.13 feet

Segment #5

Report question: *Within 3000 of a Superfund site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CABO ROJO GROUND WATER CONTAMINATION (CABO ROJO,PR)	2295.95 feet

Report question: *Within 3000 of a Toxic releases site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CUTLER HAMMER ELECTRICAL CO (CABO ROJO,PR)	2395.19 feet
CABO ROJO WOOD TREATING PLANT CORP (CABO ROJO,PR)	2592.84 feet
NASCO (CABO ROJO,PR)	2848.25 feet

Report question: *Within 3000 of a Water dischargers site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CABO ROJO (CABO ROJO,PR)	290.59 feet
BOQUERON COUNTRY CLUB (CABO ROJO,PR)	1281.71 feet

Report question: *Within 3000 of a Hazardous waste site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
DEPT OF ED - INES MARIA M DE MUNOZ MARIN (CABO ROJO,PR)	1152.21 feet
WALGREEN CO #1829 (CABO ROJO,PR)	2622.93 feet
ESCUELA LUIS MUNOZ MARIN I (CABO ROJO,PR)	1547.45 feet
PUERTO RICO INDUSTRIAL DEVELOPMENT (CABO ROJO,PR)	2604.96 feet
DEPT OF ED - INES MARIA MENDOZA (CABO ROJO,PR)	1152.21 feet
PUEBLO NUEVO SS 804231 (CABO ROJO,PR)	1564.82 feet
EXTASY O PRINTS (CABO ROJO,PR)	2488.32 feet
PUERTO RICO INDUSTRIAL DEVELOPMENT CO (CABO ROJO,PR)	2604.96 feet
CUTLER HAMMER - EATON (CABO ROJO,PR)	2395.19 feet
CABO ROJO SS 804215 (CABO ROJO,PR)	633.56 feet
CABO ROJO PROFESSIONAL DRY CLEANER INC (CABO ROJO,PR)	1190.27 feet

Report question: *Within 3000 of a Air emissions site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CABO ROJO PROFESSIONAL DRY CLEANERS (CABO ROJO,PR)	1190.27 feet
EXTASY Q PRINTS (CABO ROJO,PR)	2488.32 feet

Segment #6

Report question: *Within 3000 of a Superfund site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CABO ROJO GROUND WATER CONTAMINATION (CABO ROJO,PR)	1568.87 feet

Report question: *Within 3000 of a Toxic releases site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CABO ROJO WOOD TREATING PLANT CORP (CABO ROJO,PR)	2602.79 feet

Report question: *Within 3000 of a Water dischargers site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CABO ROJO (CABO ROJO,PR)	84.80 feet
BOQUERON COUNTRY CLUB (CABO ROJO,PR)	749.26 feet

Report question: *Within 3000 of a Hazardous waste site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
DEPT OF ED - INES MARIA M DE MUNOZ MARIN (CABO ROJO,PR)	675.24 feet
ESCUELA LUIS MUNOZ MARIN I (CABO ROJO,PR)	1527.65 feet
PUERTO RICO INDUSTRIAL DEVELOPMENT (CABO ROJO,PR)	2033.77 feet
DEPT OF ED - INES MARIA MENDOZA (CABO ROJO,PR)	675.24 feet
PUEBLO NUEVO SS 804231 (CABO ROJO,PR)	1385.15 feet
EXTASY O PRINTS (CABO ROJO,PR)	1578.66 feet
CABO ROJO WOOD TREATING PLT CORP (CABO ROJO,PR)	2602.79 feet
PUERTO RICO INDUSTRIAL DEVELOPMENT CO (CABO ROJO,PR)	2033.77 feet
CABO ROJO SS 804215 (CABO ROJO,PR)	745.43 feet
CABO ROJO PROFESSIONAL DRY CLEANER INC (CABO ROJO,PR)	592.79 feet

Report question: *Within 3000 of a Air emissions site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CABO ROJO PROFESSIONAL DRY CLEANERS (CABO ROJO,PR)	592.79 feet
EXTASY Q PRINTS (CABO ROJO,PR)	1578.66 feet

Segment #7

Report question: *Within 3000 of a Superfund site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CABO ROJO GROUND WATER CONTAMINATION (CABO ROJO,PR)	591.43 feet

Report question: *Within 3000 of a Water dischargers site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CABO ROJO (CABO ROJO,PR)	773.18 feet
BOQUERON COUNTRY CLUB (CABO ROJO,PR)	463.38 feet

Report question: *Within 3000 of a Hazardous waste site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
DEPT OF ED - INES MARIA M DE MUNOZ MARIN (CABO ROJO,PR)	468.61 feet
ESCUELA LUIS MUNOZ MARIN I (CABO ROJO,PR)	1067.25 feet
PUERTO RICO INDUSTRIAL DEVELOPMENT (CABO ROJO,PR)	2060.16 feet
DEPT OF ED - INES MARIA MENDOZA (CABO ROJO,PR)	468.61 feet
PUEBLO NUEVO SS 804231 (CABO ROJO,PR)	873.06 feet
EXTASY O PRINTS (CABO ROJO,PR)	561.38 feet
PUERTO RICO INDUSTRIAL DEVELOPMENT CO (CABO ROJO,PR)	2060.16 feet
CABO ROJO SS 804215 (CABO ROJO,PR)	968.99 feet
CABO ROJO PROFESSIONAL DRY CLEANER INC (CABO ROJO,PR)	334.64 feet

Report question: *Within 3000 of a Air emissions site?* yes

Modify question by entering a new buffer distance and unit for the selected study area:

3000 feet Submit

Name	Distance
CABO ROJO PROFESSIONAL DRY CLEANERS (CABO ROJO,PR)	334.64 feet
EXTASY Q PRINTS (CABO ROJO,PR)	561.38 feet

I. NEPASSIST

The NEPAssist database was reviewed, to identify EPA Facilities within 3,000 ft of Site:

A. Superfund:

1. Cabo Rojo Ground Water Contamination:

Distance to Site: 469.41 (northwest according to NEPAssist; on Site according to documentation reviewed)
Address: Cross Str. Calle Barbosa & Calle De Diego, Cabo Rojo, PR 00623
Site Information: Former wastewater treatment plant (government owned)
FRS ID: 110039147919
Site ID: 0206319
CERCLA (SEMS) ID: PRN000206319
NPL Status: Currently on the Final NPL
Civil Enforcement Case Report:
Case Number: 02-2021-2046
Case Name: Puerto Rico Industrial Development Corporation (PRIDCO)
Case Category: Administrative - Formal
Case Status (as of 09/09/2021): Closed
Case Lead: EPA
Court Docket Number: CERCLA-02-2021-2046
Enforcement Outcome: Final Order No Penalty
Result of Voluntary Disclosure? No
Enforcement Type: CERCLA 106 AO Resp Action/Imm Haz
Violations: No information
Total Federal Penalty Assessed or Agreed To: $0
Total State/Local Penalty Assessed: $0
Total SEP Value: $0
Total Compliance Action Cost: $695,000
Total Cost Recovery: $0

Case Summary:
On September 9, 2021, Region 2 issued Administrative Order for Remedial Design/Remedial Action (RD/RA), Index No. CERCLA-02-2021-2046, which directs the Respondent to implement the RD/RA for a portion of the Cabo Rojo Groundwater Contamination Superfund Site that EPA has designated as Plume 2. The Respondent, owner and operator of a commercial/industrial facility is directed to perform the Plume 2 work, as selected as part of a May 9, 2019, Record of Decision for the Site. The value of the Plume 2 remedy is approximately $695,000 and includes activities related to monitoring and institutional controls. The Respondent previously expressed a willingness to undertake the work pursuant to such an Order; EPA will work cooperatively with the Respondent to advance the work. The Respondent confirmed its notice of intent to comply with the Order on September 20, 2021.

NPL Site Case Information:
The Cabo Rojo Ground Water Contamination Site is composed of two plumes of contamination. Contamination was discovered during routine groundwater sampling of the Cabo Rojo Urbano public water supply wells during the early

2000's. VOC's (tetrachloroethane (PCE), trichloroethene (TCE) and cis-1,2-dichloroehtene (cis-1,2-DCE), 1,1-dichloroethene (1,1-DCE)) were detected in the Ana Maria and Club de Leones wells. During the investigation work to find the potential source of contamination, several sites in the area were screened. Results from groundwater screening revealed two distinct areas of groundwater contamination, designated as Plume 1 and Plume 2. Plume 1, which is located on the Site, consists mainly of PCE, TCE, and cis-1,2-DCE. The source of contamination for this plume was narrowed out to be a dry cleaner (Cabo Rojo Professional Dry Cleaners (CRPDC); on the Site), and a printing business (Extasy Q Print (EQP); on the Site). Plume 2, which is located 0.13 miles southwest of the Site, is regarded mainly as a 1,1-DCE plume, near the PRIDCO East facilities, which are believed to be the source of contamination. Movement of the plume has been identified to be toward the north-northwest. Contaminated media include groundwater, soil and soil vapor.

Among the other potential sources identified during the investigation processes, D'Elegant Fantastic Dry Cleaners (EPA ID PRN008009185), located 0.62 miles south of the Site, is the other one, besides the three mentioned previously, within 1 mile of the site. It is not listed as a NPL and its current status, as of May 12, 2010, is Assessment Complete - decision needed. The site has been redeveloped into a Walgreens Pharmacy. The site is not considered to be a source of the Cabo Rojo Ground Water Contamination Site, and sampling results seem to indicate that contamination from the site is moving to the east.

On May 2019, EPA signed the Record of Decision (ROD) that identifies the remedy that will be used to address the contamination. The selected remedy includes the following major components: Soil Vapor Extraction/Dual Phase Extraction (SVE/DPE) to target soil remediation zones and underlying groundwater at the CRPDC and EQP source areas; installation of vapor monitoring points to assess removal of vapor-phase contamination; Monitored Natural Attenuation (MNA) and long-term monitoring of Plume 2 and the portion of plume 1 outside of the source area; Institutional Controls; and a contingency remedy of in-situ treatment of groundwater in Plume 1 if certain conditions are met (e.g., detection of non-aqueous phase liquids, contaminant concentration increases in key monitoring wells, detections in sentinel wells, detections in supply wells). Remediation works have not yet begun.

While groundwater contamination is still present, institutional controls have to be implemented to help control and limit exposure to hazardous substances in the groundwater at the Site. The types of institutional controls included in the ROD are: 1)existing local laws that limit installation of drinking water wells without a permit; 2) informational devices will be used to prevent well installation and prohibit occupancy, use, or new construction in the source areas unless appropriate vapor-intrusion investigations are conducted and/or mitigation measures (including periodic monitoring, as necessary) are implemented; and 3) advisories published in newspapers, periodic letters sent to local government

authorities informing them of the need to prevent well installation, and inspection of local and/or Commonwealth health department records to insure that no wells are installed that could impact the groundwater plume or result in exposure to contaminated groundwater

According to the ROD,
"Results of the data collected indicate that elevated sub-slab vapor and indoor air concentrations predominantly consisted of site related PCE and TCE, which were primarily associated with the CRPDC and EQP source areas. CRPDC is currently an inactive facility, and EQP is still in use as a commercial facility. Although indoor air concentrations at EQP exceed residential Vapor Intrusion Screening Levels (VISLs), the detected concentrations do not exceed commercial VISLs. Indoor air concentrations of site related contaminants at CRPDC do not exceed either residential or commercial VISLs. However, elevated sub-slab concentrations indicate there is a potential risk from vapors migrating into the structure in the future.

In summary, the results of the Human Health Risk Assessment (HHRA) indicate that there are significant carcinogenic risks and noncarcinogenic health hazards to potentially exposed populations resulting from exposure to groundwater onsite. Site worker and resident exposure to PCE, TCE, cis-1,2-DCE and vinyl chloride in groundwater from Plume 1 results in either an excess lifetime cancer risk that exceeds the acceptable risk range established by the National Contingency Plan (NCP) or an Hazard Index (HI) above the acceptable level of 1, or both. 1,1-DCE was identified within Plume 2 at concentrations above the Puerto Rico Water Quality Standard and Federal Maximum Contaminant Level (MCL) as well. Future workers may also be exposed to elevated VOC concentrations in air via the inhalation of vapors emanating into ambient air by vaporization from underlying soil or groundwater contamination at the CRPDC and EQP source areas. The noncarcinogenic hazards and carcinogenic risks from all COPCs as well as the indoor air and sub-slab vapor intrusion results can be found in the HHRA.

No COCs were detected in surface water and sediment samples collected from drainage features near source areas. As a result, both surface water and sediment are not considered media of concern, and no RAOs have been developed for either medium.

Based on the results of indoor air and sub-slab vapor sampling collected in the Remedial investigation (RI), vapor containing PCE (and to a lesser degree, TCE) in sub-slab has been detected at several buildings, including the CRPDC and EQP buildings. The HHRA report indicates there is a potential risk from vapor migrating into the CRPDC building in the future, but vapor intrusion would not currently pose a risk to workers were it to be occupied. At EQP, the HHRA indicated that vapor intrusion may be occurring, but not at levels currently causing a risk to workers. By addressing the soil and groundwater contamination

at CRPDC and EQP, soil vapor contamination at these two areas would also be addressed."

The following tables summarize the contaminants at the Site, the performance measures status, the Site milestones and the cleanup technologies selected:

Contaminant Name	Contaminated Media	Area of Site Found (Operable Unit)	More Information	CAS #
1,1-DICHLOROETHENE	Groundwater	ENTIRE SITE (01)	ATSDR Profile	75-35-4
1,1-DICHLOROETHENE	Soil Gas	ENTIRE SITE (01)	ATSDR Profile	75-35-4
CHLOROETHENE (VINYL CHLORIDE)	Groundwater	ENTIRE SITE (01)	ATSDR Profile	75-01-4
CHLOROETHENE (VINYL CHLORIDE)	Soil Gas	ENTIRE SITE (01)	ATSDR Profile	75-01-4
CIS-1,2-DICHLOROETHENE	Groundwater	ENTIRE SITE (01)	ATSDR Profile	156-59-2
CIS-1,2-DICHLOROETHENE	Soil Gas	ENTIRE SITE (01)	ATSDR Profile	156-59-2
CIS-1,2-DICHLOROETHENE	Soil	ENTIRE SITE (01)	ATSDR Profile	156-59-2
TETRACHLOROETHENE	Groundwater	ENTIRE SITE (01)	ATSDR Profile	127-18-4
TETRACHLOROETHENE	Soil Gas	ENTIRE SITE (01)	ATSDR Profile	127-18-4
TETRACHLOROETHENE	Soil	ENTIRE SITE (01)	ATSDR Profile	127-18-4
TRICHLOROETHENE	Groundwater	ENTIRE SITE (01)	ATSDR Profile	79-01-6
TRICHLOROETHENE	Soil Gas	ENTIRE SITE (01)	ATSDR Profile	79-01-6
TRICHLOROETHENE	Soil	ENTIRE SITE (01)	ATSDR Profile	79-01-6

Performance Measure	Status at this Superfund Site	What does this mean?
Human Exposure Under Control	Yes	**Yes** means assessments indicate that across the entire site: 1. There are currently no unacceptable human exposure pathways; and 2. EPA has determined the site is under control for human exposure. **No** means an unsafe level of contamination has been detected at the site and a reasonable expectation exists that people could be exposed. **Insufficient data** means that, due to uncertainty regarding exposures, one cannot draw conclusions as to whether human exposures are controlled, typically because: 1. Response to the contamination has not begun; or 2. The response has begun, but it has not yet generated information sufficiently reliable to evaluate whether there are currently any unacceptable human exposure pathways at the site.
Groundwater Migration Under Control	No	**Yes** means EPA reviewed all information on known and reasonably expected groundwater contamination. EPA concluded the migration of contaminated groundwater is stabilized and there is no unacceptable discharge to surface water. EPA will conduct monitoring to confirm that affected groundwater remains in the original area of contamination. **No** means EPA has reviewed all information on known and reasonably expected groundwater contamination, and the migration of contaminated groundwater is not stabilized. **Insufficient data** means that due to uncertainty regarding contaminated groundwater migration, EPA cannot draw conclusions as to whether the migration of contaminated groundwater is stabilized.
Construction Complete	No	**Yes** means the physical construction of the cleanup is complete for the **entire site.** **No** means either physical construction is not complete or actions are still needed to address contamination.
Sitewide Ready for Anticipated Use	No	**Yes** means: 1. All cleanup goals affecting current and reasonably anticipated future land uses of the entire site have been achieved, so there are no unacceptable risks; 2. All required land-use restrictions or other controls have been put in place; and 3. The site has achieved Construction Complete status. **No** means that one or more of these three criteria have **not** been met. However, a site listed as **no** may still have redevelopment occurring on portions of the site and additional redevelopment may be possible. *Important Note: Sitewide Ready for Anticipated Use (SWRAU) is an*

OU ID	Name	Decision Document	Cleanup Technologies Selected in the Decision Document
00	SITEWIDE	Not applicable	
01	ENTIRE SITE	Record of Decision May 09, 2019	Air Stripping (P&T, exsitu) Bioremediation (anaerobic, insitu) Carbon Adsorption (liquid phase, P&T, exsitu) Discharge (POTW) Discharge (vertical well reinjection to contaminated aquifer) Extraction (recovery/vertical well) Institutional Controls Monitored Natural Attenuation Monitoring (groundwater) Monitoring (indoor air) Monitoring (soil gas) Multi-phase Extraction (insitu) Off-gas Treatment (other, not otherwise specified) Sampling Sealing (seal cracks in foundations, etc.) (for VI mitigation) Soil Vapor Extraction (insitu)

Site Milestones

Milestone	Date(s)
Initial Assessment Completed	12/17/2007
Proposed to the National Priorities List	10/21/2010
Finalized on the National Priorities List	03/10/2011
Remedial Investigation Started	03/10/2011
Final Remedy Selected	05/09/2019
Remedial Action Started	Estimated Jun - Aug 2024
Construction Completed	Not Yet Achieved
Deleted from National Priorities List	Not Yet Achieved
Most Recent Five-Year Review	Not Yet Achieved
Achieved Sitewide Ready for Anticipated Reuse	Not Yet Achieved

The land uses near the Site are residential, commercial, and agricultural.

Opinion:

The Project is located in the area identified as Plume 1 of the Cabo Rojo Groundwater Contamination Site. According to the information provided, the sidewalks in front of the two sites identified as sources of contamination (CRPDC and EQP) will be impacted. There would be excavation works on the contaminated area, thus they could represent an environmental concern.

B. Brownfields:

- ✓ None identified by NEPAssist

C. Toxic Release Sites (TRI):

1. **NASCO:**

   Distance to Site: 1,688.07 feet west according to NEPAssist
   Address: Boquerón Road km 73, Cabo Rojo PR 00623
   FRS ID: 110007443855
   TRI ID: 00623NSCXXCARR.
   Compliance Status: Last reported for 1988.

2. **Cutler Hammer Electrical Co:**

   Distance to Site: 1,973.75 feet southwest according to NEPAssist
   Address: RD 308 KM 0.9 PEDERNALES WARD, Cabo Rojo PR 00623
   FRS ID: 110007822865
   TRI ID: 00623CTLRHRD308
   Compliance Status: Last reported for 2007.

3. **Cabo Rojo Wood Treating Plant Corp.**

   Distance to Site: 2,592.84 feet south according to NEPAssist
   Address: RD 312-313 KM 11 Bo Ballaja, Cabo Rojo PR 00623
   FRS ID: 110000498159
   TRI ID: 00623CBRJWROAD3
   Compliance Status: Last reported for 2001.

According to the information available, these facilities do not appear to present an environmental concern for the Site regarding TRI.

D. Water Dischargers Sites (NPDES):

1. **Cabo Rojo**

Distance to Site: on Site according to NEPAssist and address
Address: NO. 28 BETANCES STREET, Cabo Rojo PR 00623
FRS ID: 110054103126
NPDS ID: PRR040030
Universe: Minor: General Permit Covered Facility (MS4) - Permit Expired; Compliance Tracking Partially Off
Permit Expiration Date: 06/30/2021
Compliance Status: Compliance status unknown as of date of last compliance monitoring activity (10/26/2016). No significant noncompliance or high priority violation as of 12/31/2022

2. **Boquerón Country Club**

Distance to Site: on Site according to NEPAssist, 19,516.92 ft according to address.
Address ROAD 307, KM 8.1, Cabo Rojo PR 00623
FRS ID: 110037118106
NPDS ID: PRR10BA03
Universe: Minor: General Permit Covered Facility- Permit Pending
Permit Expiration Date: No permit
Compliance Status: Not applicable.

Formal Enforcement Actions:

Case 02-2009-3305- Cabari Corporation- Administrative- Formal-
Violations: Discharge Emission or Activity WO Required Permit. SWPPP deficiencies, at the site no BMPs, silt fences were not installed.
Enforcement Outcome: Final Order with Penalty as of 07/31/2009: Closed
Total Federal Penalty Assessed or Agreed To: $5,375
Compliance Action Cost: $17,000

This facility is outside the 3,000 ft radius.

3. **Galeria 100 Estates Corp.**

Distance to Site: 1,786.81 feet west according to NEPAssist, 3,070 ft northwest according to address.
Address PR 100, KM 6.6, Cabo Rojo PR 00623
FRS ID: 110030486212
NPDS ID: PRU201915
Universe: Minor: Unpermitted Facility
Permit Expiration Date: No permit
Compliance Status: Not applicable.

Formal Enforcement Actions:

Case 02-2008-3303- Comas and Comas Contractors Corp. (Galeria 100)- Administrative- Formal- This is a small 2-acre site where a shopping center is being built. Violations: Discharge Emission or Activity WO Required Permit (NPDS) Enforcement Outcome: Final Order With Penalty as of 03/14/2008: Closed
Total Federal Penalty Assessed or Agreed To: $12,750
Compliance Action Cost: $0

Case 02-2007-3025- Comas and Comas Contractors Corp.
- Administrative- Formal- This is a small 2-acre site where a shopping center is being built. Violations: Discharge Emission or Activity WO Required Permit. Enforcement Outcome: Unilateral Administrative Order Without Adjudication as of 03/14/2007: Final Order Issued
Total Federal Penalty Assessed or Agreed To: $0
Compliance Action Cost: $7,000

This facility is outside the 3,000 ft radius.

According to the information available, these facilities do not appear to present an environmental concern for the Site regarding the NPDES Program.

E. Hazardous Waste (RCRA):

1. **Dept of Ed- Ines Maria M De Munoz Marin**
   Distance to Site: On Site according to NEPAssist; 75 feet to the west according to address
   Address: CALLE BARBOSA FRENTE, Cabo Rojo PR 00622
   FRS ID: 110007802182
   RCRA ID: PR0000339978 (active) and PR0000011171 (inactive)
   Handler Type: PR0000339978-Very Small Quantity Generator (VSQG), Active; PR0000011171- Other, Inactive
   Compliance Status: No significant noncompliance or high priority violation as of 06/24/2023.

2. **Walgreens Co:**
   Distance to Site: 2,145.82 feet southwest according to NEPAssist; 3,685.99 feet southwest according to address
   Address: 80 CARR 308, Cabo Rojo PR 00623
   FRS ID: 110062915886
   RCRA ID: PRR000024919
   Handler Type: VSQG- Active
   Compliance Status: No significant noncompliance or high priority violation as of 06/24/2023.

   This facility is outside the 3,000 ft radius.

3. **Escuela Luiz Munoz Marin I:**
   Distance to Site: On Site according to NEPAssist
   Address: Barrio Pueblo Nuevo, Cabo Rojo PR 00623-0868
   FRS ID: 110007812199
   RCRA ID: PRD987378783
   Handler Type: Other- Inactive
   Compliance Status: No violation identified and no significant noncompliance or high priority violation as of 06/24/2023.

4. **Puerto Rico Industrial Development:**
   Distance to Site: 2,033.77 feet east according to NEPAssist; 1,860.69 southwest according to address
   Address: PR 103 KM 7.3, Cabo Rojo PR 00623
   FRS ID: 110007813036
   RCRA ID: PRD987381423 and PRR000002816 (both inactive)
   Handler Type: Other- Inactive
   Compliance Status: No Violation Identified as of Date of Last Compliance Monitoring Activity (12/13/1996). No violation identified and no significant noncompliance or high priority violation as of 06/24/2023.

5. **Pueblo Nuevo SS 804231**
   Distance to Site: On Site according to NEPAssist and adjacent to the north according to PRDNER
   Address: CALLE CARBONELL ESQ, Cabo Rojo PR 00623
   FRS ID: 110007817942
   RCRA ID: PRR000003921
   Handler Type: Other- Inactive
   Compliance Status: No violation identified and no significant noncompliance or high priority violation as of 06/24/2023.

   The site is identified as LUST Inactive in the PRDRNA 2020 databases (UST ID 86-0685). However, past releases at this site are not expected to have had the potential to migrate to affect the subject property.

6. **Extasy O Prints:**
   Distance to Site: 560.98 feet north according to NEPAssist; adjacent to site to the east according to address
   Address: CENTRO COMERICAL ANA MARIA, Cabo Rojo PR 00623
   FRS ID: 110028288136
   RCRA ID: PRN008024804
   Handler Type: Other- Inactive
   Compliance Status: No Violation Identified as of Date of Last Compliance Monitoring Activity (04/252012). No violation identified and no significant noncompliance or high priority violation as of 06/24/2023.

7. **Cutler Hammer- Eaton:**
   Distance to Site: 1,973.75 feet southwest according to NEPAssist
   Address: RD 308 KM 0.9 PEDERNALES WARD, Cabo Rojo PR 00623
   FRS ID: 110007822865
   RCRA ID: PRR000012666
   Handler Type: VSQG- Active
   Compliance Status: No Violation Identified as of Date of Last Compliance Monitoring Activity (03/30/2007). No violation identified and no significant noncompliance or high priority violation as of 06/24/2023.

8. **Cabo Rojo Wood Treating PLT CORP:**
   Distance to Site: 2,592.84 feet southeast according to NEPAssist
   Address: CARR 312 313 KM 1.1, Cabo Rojo PR 00623
   FRS ID: 110000498159
   RCRA ID: PRD987372794
   Handler Type: VSQG- Active
   Compliance Status: No Violation Identified as of Date of Last Compliance Monitoring Activity (08/29/2011) No violation identified and no significant noncompliance or high priority violation as of 06/24/2023.

9. **Cabo Rojo SS 804215:**
   Distance to Site: On Site according to NEPAssist and PRDNER
   Address: CALLE SALVADOR BRAU 65, Cabo Rojo PR 00623-3410
   FRS ID: 110004892616
   RCRA ID: PRR000003707
   Handler Type: Other- Inactive
   Compliance Status: No violation identified and no significant noncompliance or high priority violation as of 06/24/2023.

   The site is identified as LUST Inactive in the PRDRNA 2020 databases (UST ID 86-0665). Even though it is located adjacent to the Site, since the site was released from further investigation by the PRDNER, it does not appear to present an environmental concern.

10. **Cabo Rojo Professional Dry Cleaner Inc**
    Distance to Site: On Site according to NEPAssist
    Address: 50 CARBONEL ST, Cabo Rojo PR 00623-1247
    FRS ID: 110004895962
    RCRA ID: PRR000013433
    Handler Type: VSQG- Active
    Compliance Status: No Violation Identified as of Date of Last Compliance Monitoring Activity (04/14/2016). No violation identified and no significant noncompliance or high priority violation as of 06/24/2023.

According to the information available, these facilities do not appear to present an environmental concern for the Site with regard to RCRA.

F. Air Emission Sites:

1. Extasy Q Prints:

Distance to Site: 560.98 feet north according to NEPAssist; adjacent to the east according to Address
Address: CENTRO COMERCIAL ANA MARIA, Cabo Rojo, PR 00623
FRS ID: 110028288136
Clean Air Act: PR0000007202300008
Programs:

- State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards (CAASIP)

Air Facility Status: Minor Emissions, Permanently Closed
Compliance Status: No violation identified as of date of last compliance monitoring activity (4/25/2012) and no significant noncompliance or high priority violation as of 6/17/2023.

2. Cabo Rojo Professional Dry Cleaner

Distance to Site: On Site according to NEPAssist
Address: 50 CARBONEL ST, Cabo Rojo PR 00623-1247
FRS ID: 110004895962
Clean Air Act: PR0000007202300002
Programs:

- State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards (CAASIP)
- MACT Standards (40 CFR Part 63) (CAAMACT) - Subpart M - DRY CLEANERS PERCHLOROETHYLENE

Air Facility Status: Minor Emissions, Permanently Closed
Compliance Status: No violation identified and no significant noncompliance or high priority violation as of 06/24/2023.

According to the information available, these facilities do not appear to present an environmental concern for the Site with regard to Air Emissions.

II. Additional information from EDR Radius Report and information available:

1. Federal CERCLIS NFRAP Site List:

According to the No Further Remedial Action Liability List (CERCLIS NFRAP), the following CERCLIS NPRAP sites were identified within 0.5 miles (0.8 km) of the Site:

1. **Extasy Q Prints**
   Distance to Site: adjacent to the east according to address
   Address: CENTRO COMERCIAL ANA MARIA, Cabo Rojo, PR 00623
   FRS ID: 110028288136
   EPA ID: PRN000206061
   Case Status: Assessment completed – Decision needed. Active as of 05-12-2010; no contaminants on site.

   This is one of the facilities identified as a potential source of contamination for the Cabo Rojo Ground Water superfund site (Plume 1). The EPA Record of Decision (dated May 2019) indicates that contamination was found in the soil, groundwater and that vapor intrusion was identified at this site. We understand it could represent an environmental concern.

2. **Borincano Dry Cleaning**
   Distance to Site: On Site according to address
   Address: 52 Calle Brau, Cabo Rojo, PR, 00623
   FRS ID: 110007810654
   EPA ID: PRN000206072
   Case Status: Active as of 12-04-2007; no contaminants on site.

   The area where this facility is located is inside plume 1 of the Cabo Rojo Ground Water superfund site. We understand it could represent an environmental concern, since it is still an active NFRAP case.

3. **Cabo Rojo Professional Dry Cleaners**
   Distance to Site: On Site according to address
   Address: 50 CALLE CARBONELL, Cabo Rojo, PR, 00623
   FRS ID: 110004895962
   EPA ID: PRR000013433
   Case Status: Assessment completed – Decision needed. Active as of 05-12-2010; no contaminants on site.

   This is one of the facilities identified as a potential source of contamination for the Cabo Rojo Ground Water superfund site. The EPA Record of Decision (dated May 2019) indicates that contamination was found in the soil, groundwater and that vapor intrusion was identified at this site. We understand it could represent an environmental concern.

4. **Centro De Transmisiones**
   Distance to Site: On Site according to address
   Address: 1 CALLE JOSE DE DIEGO, Cabo Rojo, PR, 00623
   FRS ID: 110028288154
   EPA ID: PRN000206063
   Case Status: Active as of 01-07-2007; no contaminants on site.

   According to studies performed at the Site, groundwater movement is toward the north and northeast. Since this site is located north of the project (according to EPA), it does not appear to represent an environmental concern.

5. **Radiadores W/Papo Quinones Auto Repair Shop**
   Distance to Site: 0.13 mi east, according to address
   Address: ROAD 103, KM 5.4, Cabo Rojo, PR, 00623
   FRS ID: 110028288225
   EPA ID: PRN000206069
   Case Status: Active as of 12-05-2007; no contaminants on site.

   According to studies performed at the Site, groundwater movement is toward the north and northeast. Since this site is located east of the project (according to EPA), it does not appear to represent an environmental concern.

6. **Centro De Acopio (Obras Publicas)**
   Distance to Site: 0.18 mi north
   Address: CALLE PERIFERAL NORTE FINAL, Cabo Rojo, PR, 00623
   FRS ID: 110028288207
   EPA ID: PRN000206066
   Case Status: Active as of 02-06-2008; no contaminants on site.

   According to studies performed at the Site, groundwater movement is toward the north and northeast. Since the site is located north of the project (according to EPA), it does not appear to represent an environmental concern.

7. **Eaton Cutler-Hammer Electrical Co., Former**
   Distance to Site: 0.37 mi southwest
   Address: ROAD 103, KM 7.4, Cabo Rojo, PR, 00623
   FRS ID: 110071100875
   EPA ID: PRD981567183
   Case Status: Active as of 02-06-2008; no contaminants on site

   The area where this facility is located (PRIDCO East), was identified by the EPA as one of the potential sources of contamination for the Cabo Rojo Ground Water superfund site (plume 2). The EPA Record of Decision (dated May 2019) indicates that contamination was found in the soil, groundwater and that vapor at the PRIDCO East. We understand it could represent an environmental concern.

8. **Auto Piezas Javy**
   Distance to Site: 0.26 mi southwest
   Address: ROAD 103, KM 7.1, Cabo Rojo, PR, 00623
   FRS ID: 110028288145
   EPA ID: PRN000206062
   Case Status: Active as of 06-27-2007; no contaminants on site

   The area where this facility is located is inside plume 2 of the Cabo Rojo Ground Water superfund site. We understand it could represent an environmental concern, since it is still an active NFRAP case.

9. **PRIDCO**
   Distance to Site: 0.46 mi southwest
   Address: ROAD 103, KM 7.3, Cabo Rojo, PR, 00623
   FRS ID: 110071100876
   EPA ID: PRD987381423
   Case Status: Active as of 05-13-2010; Assessment Complete - Decision Needed - no contaminants on site.

   The PRIDCO East site was identified by the EPA as one of the potential sources of contamination for the Cabo Rojo Ground Water superfund site (plume 2). The EPA Record of Decision (dated May 2019) indicates that contamination was found in the soil, groundwater, and that vapor at the PRIDCO East. We understand it could represent an environmental concern.

10. **Junny Auto Paint**
    Distance to Site: 0.37 mi southwest
    Address: ROAD 100, KM 8.0, Cabo Rojo, PR, 00623
    FRS ID: 110028288163
    EPA ID: PRD987381423
    Case Status: Active as of 01-16-2008; no contaminants on site.

    Since the site is separated from the project location by a tributary of Mendoza Creek, (according to EPA's location), it does not appear to represent an environmental concern.

2. **Leaking UST List LUST:**

The DNER maintains a list of Leaking Underground Storage Tanks (LUST) incident reports. According to the LUST list available from PREQB (2020), the following LUST sites are located within 0.5 miles (0.8 km) from the Site.

Active Lusts:

1. **UST ID 86-1882 Texaco #647:**
   Distance to Site: approx. 0.23 miles west according to address
   Address: CARR. 103, KM. 6.9, Cabo Rojo PR 00623
   Status: Active LUST according to PR DNER 2020 lists; the facility is owned by Texaco Puerto Rico, and the leak was discovered on April 27, 1995, during UST removal

   The area where this facility is located is inside plume 2 of the Cabo Rojo Ground Water superfund site. We understand it could represent an environmental concern, since it is still an active LUST case.

Inactive Lusts:

1. **UST ID 86-0685 Pueblo Nuevo SS 804231**
   Distance to Site: adjacent to the north according to PRDNER
   Address: CALLE CARBONELL ESQ, Cabo Rojo PR 00623
   FRS ID: 110007817942
   Status: Inactive LUST according to PR DNER 2020 lists; the facility is owned by the Sol P.R. Limited and the leak was discovered on May 23, 1997, because of product in well. It was released from further investigation and remedial actions by the DNER on December 28, 2001.

   Since it was released from further investigation, past releases at this site are not expected to have had the potential to migrate to affect the subject property.

2. **UST ID 86-0665 Cabo Rojo SS 804215:**
   Distance to Site: On Site according to PRDNER
   Address: CALLE SALVADOR BRAU 65, Cabo Rojo PR 00623
   FRS ID: 110004892616
   RCRA ID: PRR000003707
   Status: Inactive LUST according to PR DNER 2020 lists; the facility is owned by Shell Company (P.R.) Limited, and the leak was discovered on August 3, 2001, during UST removal. It was released from further investigation and remedial actions by the DNER on September 28, 2004.

   Even though it is located adjacent to the Site, since the site was released from further investigation by the PRDNER, it does not appear to present an environmental concern.

3. **UST ID 86-0885 Shell #1937:**
   Distance to Site: 0.32 miles east according to PRDNER
   Address: Carr. 103 KM. 5.5, Cabo Rojo PR 00623
   Status: Inactive LUST according to PR DNER 2020 lists; the facility is owned by Shell Company (P.R.) Limited, and the leak was discovered on October 8, 2003, during UST removal. It was released from further investigation and remedial actions by the DNER (date unknown).

   Even though it is located adjacent to the Site, groundwater movement in the area (per studies prepared for the EPA) suggests that releases at this site are not expected to have had the potential to migrate to affect the subject property. Moreover, the site was released from further investigation by the PRDNER, thus it does not appear to present an environmental concern.

4. **UST ID 92-0097 Planta Alcantarrillado:**
   Distance to Site: 0.32 miles east according to address
   Address: Camino La Charca Urb. Santa María, Cabo Rojo PR 00623
   Status: Inactive LUST according to PR DNER 2020 lists; the facility is owned by Autoridad Acueductos y Alcantarillados, and it was released from further investigation and remedial actions by the DNER on April 30, 1999.

   Since it was released from further investigation, past releases at this site are not expected to have had the potential to migrate to affect the subject property.

B. No facilities listed in EDR for:

1. **Federal Delisted NPL Site List** (within 0.5 mile (0.8 km) of the Site)
2. **Federal CERCLIS List (**within 0.5 miles (0.8 km) of the Site)
3. **Federal RCRA CORRACTS Facilities List** (within 1.0 mile (1.6 km) of the Site)
4. **Federal RCRA non-CORRACTS TSD Facilities List (**0.5 miles (0.8 km) of the Site)
5. **Federal ERNS List** (Site)

C. **Information provided by the PREQB**

1. The Environmental Emergencies Department of the DNER indicated they had no active investigations at the Site.

2. According to the DNER Land Contamination Program's Landfill Lists, there are no landfills within 0.5 miles (0.8 km) from the Site. Upon inquiry to the DNER, they had no active investigations at the Site.

3. The DNER UST Program did not respond to our query regarding this issue (information requested on September 18, 2022).

Supporting Documents for Exhibit 6a
NEPAssist Identified
Facilities within 3,000 ft

Report Prepared on August 2023

Cabo Rojo Streets
Cabo Rojo
Cabo Rojo, PR 00623

Inquiry Number: 7365109.2s
June 15, 2023

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Report Prepared on August 2023

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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Report Prepared on August 2023

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527 - 21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E2247 - 16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E1528 - 22) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

CABO ROJO
CABO ROJO, PR 00623

COORDINATES

Latitude (North):	18.0866390 - 18° 5' 11.90''
Longitude (West):	67.1457420 - 67° 8' 44.67''
Universal Tranverse Mercator:	Zone 19
UTM X (Meters):	696231.2
UTM Y (Meters):	2000636.5
Elevation:	66 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	12360454 PUERTO REAL, PR
Version Date:	2018

MAPPED SITES SUMMARY

Target Property Address:
CABO ROJO
CABO ROJO, PR 00623

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
Reg	CABO ROJO GROUND WAT	CROSS STR. CALLE BAR	NPL, SEMS, US ENG CONTROLS, US INST CONTROLS, ROD	Same	1 ft.
A1	DEPT OF ED - INES MA	CALLE BARBOSA FRENTE	FINDS, ECHO	Lower	1 ft.
B2	ESCUELA LUIS MUNOZ M	BARRIO PUEBLO NUEVO	FINDS, ECHO	Lower	1 ft.
C3	BORINCANO DRY CLEANI	52 CALLE BRAU	FINDS	Higher	1 ft.
C4	#646 - CABO ROJO	CARR 103 INT CARR 10	ICIS	Higher	1 ft.
D5	SANZ TROPICAL MFG CO	62 CALLE CARBONELL	FINDS	Lower	1 ft.
D6	CABO ROJO MUNICIPAL	CARR303, KM1.4,BO LL	RCRA NonGen / NLR	Lower	1 ft.
D7	CABO ROJO MUNICIPAL	ROAD 303, KM 2.1 LLA	FINDS, ECHO	Lower	1 ft.
D8	CABO ROJO PROFESSION	50 CALLE CARBONELL	SEMS, RCRA-VSQG	Lower	1 ft.
D9	CABO ROJO LANDFILL	PR-303 KM 13.4 LLANO	FINDS, ECHO	Lower	1 ft.
C10	BORINCANO DRY CLEANI	52 CALLE BRAU	SEMS	Higher	1 ft.
E11	SIT-GO SERVICE STATI	SALVADOR BRAU (65	RGA LUST	Higher	1 ft.
E12	SHELL 804215	SALVADOR BRAU (65	RGA LUST	Higher	1 ft.
E13		SALVADOR BRAU (65	RGA LUST	Higher	1 ft.
E14	CABO ROJO SS 804215	CALLE SALVADOR BRAU	RCRA NonGen / NLR	Higher	1 ft.
E15	SHELL 804215	SALVADOR BRAU (65	LUST	Higher	1 ft.
16	CABO ROJO	NO. 28 BETANCES STRE	FINDS, ECHO	Lower	1 ft.
C17	CABO ROJO SS 804215	CALLE SALVADOR BRAU	FINDS, ECHO	Lower	1 ft.
E18	SIT-GO SERVICE STATI	SALVADOR BRAU #65	UST	Higher	1 ft.
C19	THE OLD CABORROJE?A	CALLE BARBOSA #8 ESQ	FINDS	Higher	1 ft.
A20	CABO ROJO PROFESSION	50 CARBONEL ST	FINDS, ECHO	Higher	1 ft.
B21	PUEBLO NUEVO SS 8042	CALLE CARBONELL ESQ	FINDS, ECHO	Lower	1 ft.
F22	CENTRO DE TRANSMICIO	1 CALLE JOSE DE DIEG	FINDS	Lower	1 ft.
B23	SANZ TROPICAL MFG CO	CALLE CARBONELL 62	FINDS	Lower	1 ft.
A24	BOQUERON COUNTRY CLU	ROAD 307, KM 8.1	FINDS, ECHO	Lower	1 ft.
F25	CENTRO DE TRANSMICIO	1 CALLE JOSE DE DIEG	SEMS	Lower	1 ft.
B26	SHELL 4231	CALLE CARBONELL 86	LUST	Lower	55, 0.010, WNW
B27	RAMIREZ LUGO SAMUEL	86 CARBONELL ST	EDR Hist Auto	Lower	55, 0.010, WNW
G28	ACEVEDO MATOS EDWIN	1 CALLE RIUS RIVERA	EDR Hist Cleaner	Lower	82, 0.016, ENE
G29	RAMIREZ LUGO SAMUEL	86 CALLE CARBONELL	EDR Hist Auto	Lower	98, 0.019, NE
H30	FUTURE BLINDS AUTOMO	ROAD 103, KM 4.1	SEMS	Higher	236, 0.045, SW
H31	RADIADORES W/PAPO QU	ROAD 103, KM 5.4	SEMS	Higher	269, 0.051, SW
32	CENTRO DE ACOPIO (OB	CALLE PERIFERAL NORT	SEMS	Lower	1052, 0.199, North
33	ABANDONED MECHANIC	ROAD 100, KM 5.1	SEMS	Higher	1777, 0.337, SW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL ---------- National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY ---------- Federal Facility Site Information listing

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS ---------- Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System

Federal ERNS list

ERNS ---------- Emergency Response Notification System

EXECUTIVE SUMMARY

Lists of state- and tribal hazardous waste facilities

SHWS ---- This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

Lists of state and tribal leaking storage tanks

INDIAN LUST ---- Leaking Underground Storage Tanks on Indian Land

Lists of state and tribal registered storage tanks

FEMA UST ---- Underground Storage Tank Listing
INDIAN UST ---- Underground Storage Tanks on Indian Land

Lists of state and tribal voluntary cleanup sites

INDIAN VCP ---- Voluntary Cleanup Priority Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI ---- Report on the Status of Open Dumps on Indian Lands
ODI ---- Open Dump Inventory
DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ---- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---- Delisted National Clandestine Laboratory Register
US CDL ---- National Clandestine Laboratory Register

Local Land Records

LIENS 2 ---- CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System

Other Ascertainable Records

FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act

TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PADS	PCB Activity Database System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
DOCKET HWC	Hazardous Waste Compliance Docket Listing
UXO	Unexploded Ordnance Sites
FUELS PROGRAM	EPA Fuels Program Registered Listing
PFAS NPL	Superfund Sites with PFAS Detections Information
PFAS FEDERAL SITES	Federal Sites PFAS Information
PFAS TSCA	PFAS Manufacture and Imports Information
PFAS RCRA MANIFEST	PFAS Transfers Identified In the RCRA Database Listing
PFAS ATSDR	PFAS Contamination Site Location Listing
PFAS WQP	Ambient Environmental Sampling for PFAS
PFAS NPDES	Clean Water Act Discharge Monitoring Information
PFAS ECHO	Facilities in Industries that May Be Handling PFAS Listing
PFAS ECHO FIRE TRAINING	Facilities in Industries that May Be Handling PFAS Listing
PFAS PART 139 AIRPORT	All Certified Part 139 Airports PFAS Information Listing
AQUEOUS FOAM NRC	Aqueous Foam Related Incidents Listing
MINES MRDS	Mineral Resources Data System
PFAS TRIS	List of PFAS Added to the TRI

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: Also known as Superfund, the National Priority List database is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund program. The source of this database is the U.S. EPA.

A review of the NPL list, as provided by EDR, and dated 04/26/2023 has revealed that there is 1 NPL site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CABO ROJO GROUND WAT Cerclis ID:: 206319 EPA Id: PRN000206319	***CROSS STR. CALLE BAR***	***0 - 1/8 (0.000 mi.)***	***0***	***7***

Lists of Federal sites subject to CERCLA removals and CERCLA orders

SEMS: SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the SEMS list, as provided by EDR, and dated 04/26/2023 has revealed that there are 8 SEMS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CABO ROJO GROUND WAT Site ID: 0206319 EPA Id: PRN000206319	***CROSS STR. CALLE BAR***	***0 - 1/8 (0.000 mi.)***	***0***	***7***
BORINCANO DRY CLEANI Site ID: 0206072 EPA Id: PRN000206072	52 CALLE BRAU	0 - 1/8 (0.000 mi.)	C10	32
FUTURE BLINDS AUTOMO Site ID: 0206082 EPA Id: PRN000206082	ROAD 103, KM 4.1	SW 0 - 1/8 (0.045 mi.)	H30	45
RADIADORES W/PAPO QU Site ID: 0206069 EPA Id: PRN000206069	ROAD 103, KM 5.4	SW 0 - 1/8 (0.051 mi.)	H31	46
ABANDONED MECHANIC Site ID: 0206055 EPA Id: PRN000206055	ROAD 100, KM 5.1	SW 1/4 - 1/2 (0.337 mi.)	33	49

Lower Elevation	Address	Direction / Distance	Map ID	Page
CABO ROJO PROFESSION	***50 CALLE CARBONELL***	***0 - 1/8 (0.000 mi.)***	***D8***	***26***

Site ID: 0206056 EPA Id: PRR000013433				
CENTRO DE TRANSMICIO Site ID: 0206063 EPA Id: PRN000206063	1 CALLE JOSE DE DIEG	0 - 1/8 (0.000 mi.)	F25	42
CENTRO DE ACOPIO (OB Site ID: 0206066 EPA Id: PRN000206066	CALLE PERIFERAL NORT	N 1/8 - 1/4 (0.199 mi.)	32	48

Lists of Federal RCRA generators

RCRA-VSQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-VSQG list, as provided by EDR, and dated 03/06/2023 has revealed that there is 1 RCRA-VSQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CABO ROJO PROFESSION EPA ID:: PRR000013433	***50 CALLE CARBONELL***	***0 - 1/8 (0.000 mi.)***	***D8***	***26***

Federal institutional controls / engineering controls registries

US ENG CONTROLS: A listing of sites with engineering controls in place.

A review of the US ENG CONTROLS list, as provided by EDR, and dated 02/20/2023 has revealed that there is 1 US ENG CONTROLS site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CABO ROJO GROUND WAT EPA ID:: PRN000206319 EPA ID:: PRN000206319	***CROSS STR. CALLE BAR***	***0 - 1/8 (0.000 mi.)***	***0***	***7***

US INST CONTROLS: A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

A review of the US INST CONTROLS list, as provided by EDR, and dated 02/20/2023 has revealed that there is 1 US INST CONTROLS site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CABO ROJO GROUND WAT	***CROSS STR. CALLE BAR***	***0 - 1/8 (0.000 mi.)***	***0***	***7***

EXECUTIVE SUMMARY

EPA ID:: PRN000206319

Lists of state and tribal leaking storage tanks

LUST: Leaking Underground Storage Tanks.

A review of the LUST list, as provided by EDR, and dated 09/24/2020 has revealed that there are 2 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SHELL 804215 Facility Id: 86-0665	SALVADOR BRAU (65	0 - 1/8 (0.000 mi.)	E15	38

Lower Elevation	Address	Direction / Distance	Map ID	Page
SHELL 4231 Facility Id: 86-0685	CALLE CARBONELL 86	WNW 0 - 1/8 (0.010 mi.)	B26	44

Lists of state and tribal registered storage tanks

UST: UST Facilities.

A review of the UST list, as provided by EDR, and dated 01/01/2008 has revealed that there is 1 UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SIT-GO SERVICE STATI Facility Id: 2-860665 Tank Status: Permanently Out of Use Tank Status: Currently In Use	SALVADOR BRAU #65	0 - 1/8 (0.000 mi.)	E18	39

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/06/2023 has revealed that there are 2 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CABO ROJO SS 804215	CALLE SALVADOR BRAU	0 - 1/8 (0.000 mi.)	E14	35

EPA ID:: PRR000003707

Lower Elevation	Address	Direction / Distance	Map ID	Page
CABO ROJO MUNICIPAL EPA ID:: PRS009000464	CARR303, KM1.4,BO LL	0 - 1/8 (0.000 mi.)	D6	20

ROD: Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid the cleanup.

A review of the ROD list, as provided by EDR, and dated 04/26/2023 has revealed that there is 1 ROD site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CABO ROJO GROUND WAT EPA ID:: PRN000206319	***CROSS STR. CALLE BAR***	***0 - 1/8 (0.000 mi.)***	***0***	***7***

PRP: A listing of verified Potentially Responsible Parties

A review of the PRP list, as provided by EDR, and dated 04/26/2023 has revealed that there is 1 PRP site within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CABO ROJO GROUND WAT	***CROSS STR. CALLE BAR***	***0 - 1/8 (0.000 mi.)***	***0***	***7***

ICIS: The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

A review of the ICIS list, as provided by EDR, and dated 11/18/2016 has revealed that there is 1 ICIS site within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
#646 - CABO ROJO FRS ID:: 110043707067	CARR 103 INT CARR 10	0 - 1/8 (0.000 mi.)	C4	19

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 02/02/2023 has revealed that there are 14 FINDS sites within approximately 0.001 miles of the target property.

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORINCANO DRY CLEANI Registry ID:: 110029528580	52 CALLE BRAU	0 - 1/8 (0.000 mi.)	C3	18
THE OLD CABORROJE?A Registry ID:: 110070347974	CALLE BARBOSA #8 ESQ	0 - 1/8 (0.000 mi.)	C19	40
CABO ROJO PROFESSION Registry ID:: 110004895962	***50 CARBONEL ST***	***0 - 1/8 (0.000 mi.)***	***A20***	***40***

Lower Elevation	Address	Direction / Distance	Map ID	Page
DEPT OF ED - INES MA Registry ID:: 110007802182	***CALLE BARBOSA FRENTE***	***0 - 1/8 (0.000 mi.)***	***A1***	***17***
ESCUELA LUIS MUNOZ M Registry ID:: 110007812199	***BARRIO PUEBLO NUEVO***	***0 - 1/8 (0.000 mi.)***	***B2***	***18***
SANZ TROPICAL MFG CO Registry ID:: 110070331716	62 CALLE CARBONELL	0 - 1/8 (0.000 mi.)	D5	19
CABO ROJO MUNICIPAL Registry ID:: 110066904531	***ROAD 303, KM 2.1 LLA***	***0 - 1/8 (0.000 mi.)***	***D7***	***25***
CABO ROJO LANDFILL Registry ID:: 110043972779	***PR-303 KM 13.4 LLANO***	***0 - 1/8 (0.000 mi.)***	***D9***	***31***
CABO ROJO Registry ID:: 110054103126	***NO. 28 BETANCES STRE***	***0 - 1/8 (0.000 mi.)***	***16***	***38***
CABO ROJO SS 804215 Registry ID:: 110004892616	***CALLE SALVADOR BRAU***	***0 - 1/8 (0.000 mi.)***	***C17***	***39***
PUEBLO NUEVO SS 8042 Registry ID:: 110007817942	***CALLE CARBONELL ESQ***	***0 - 1/8 (0.000 mi.)***	***B21***	***41***
CENTRO DE TRANSMICIO Registry ID:: 110028288154	1 CALLE JOSE DE DIEG	0 - 1/8 (0.000 mi.)	F22	41
SANZ TROPICAL MFG CO Registry ID:: 110070317858	CALLE CARBONELL 62	0 - 1/8 (0.000 mi.)	B23	42
BOQUERON COUNTRY CLU Registry ID:: 110037118106	***ROAD 307, KM 8.1***	***0 - 1/8 (0.000 mi.)***	***A24***	***42***

ECHO: ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

A review of the ECHO list, as provided by EDR, and dated 03/25/2023 has revealed that there are 9 ECHO sites within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CABO ROJO PROFESSION Registry ID: 110004895962	***50 CARBONEL ST***	***0 - 1/8 (0.000 mi.)***	***A20***	***40***

Lower Elevation	Address	Direction / Distance	Map ID	Page
DEPT OF ED - INES MA Registry ID: 110007802182	***CALLE BARBOSA FRENTE***	***0 - 1/8 (0.000 mi.)***	***A1***	***17***
ESCUELA LUIS MUNOZ M	***BARRIO PUEBLO NUEVO***	***0 - 1/8 (0.000 mi.)***	***B2***	***18***

Registry ID: 110007812199				
CABO ROJO MUNICIPAL	***ROAD 303, KM 2.1 LLA***	***0 - 1/8 (0.000 mi.)***	***D7***	***25***
Registry ID: 110066904531				
CABO ROJO LANDFILL	***PR-303 KM 13.4 LLANO***	***0 - 1/8 (0.000 mi.)***	***D9***	***31***
Registry ID: 110043972779				
CABO ROJO	***NO. 28 BETANCES STRE***	***0 - 1/8 (0.000 mi.)***	***16***	***38***
Registry ID: 110054103126				
CABO ROJO SS 804215	***CALLE SALVADOR BRAU***	***0 - 1/8 (0.000 mi.)***	***C17***	***39***
Registry ID: 110004892616				
PUEBLO NUEVO SS 8042	***CALLE CARBONELL ESQ***	***0 - 1/8 (0.000 mi.)***	***B21***	***41***
Registry ID: 110007817942				
BOQUERON COUNTRY CLU	***ROAD 307, KM 8.1***	***0 - 1/8 (0.000 mi.)***	***A24***	***42***
Registry ID: 110037118106				

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there are 2 EDR Hist Auto sites within approximately 0.125 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
RAMIREZ LUGO SAMUEL	86 CARBONELL ST	WNW 0 - 1/8 (0.010 mi.)	B27	44
RAMIREZ LUGO SAMUEL	86 CALLE CARBONELL	NE 0 - 1/8 (0.019 mi.)	G29	45

EDR Hist Cleaner: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Cleaner list, as provided by EDR, has revealed that there is 1 EDR Hist Cleaner site within approximately 0.125 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ACEVEDO MATOS EDWIN	1 CALLE RIUS RIVERA	ENE 0 - 1/8 (0.016 mi.)	G28	44

EXECUTIVE SUMMARY

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST: The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Environmental Quality Board in Puerto Rico.

A review of the RGA LUST list, as provided by EDR, has revealed that there are 3 RGA LUST sites within approximately 0.001 miles of the target property.

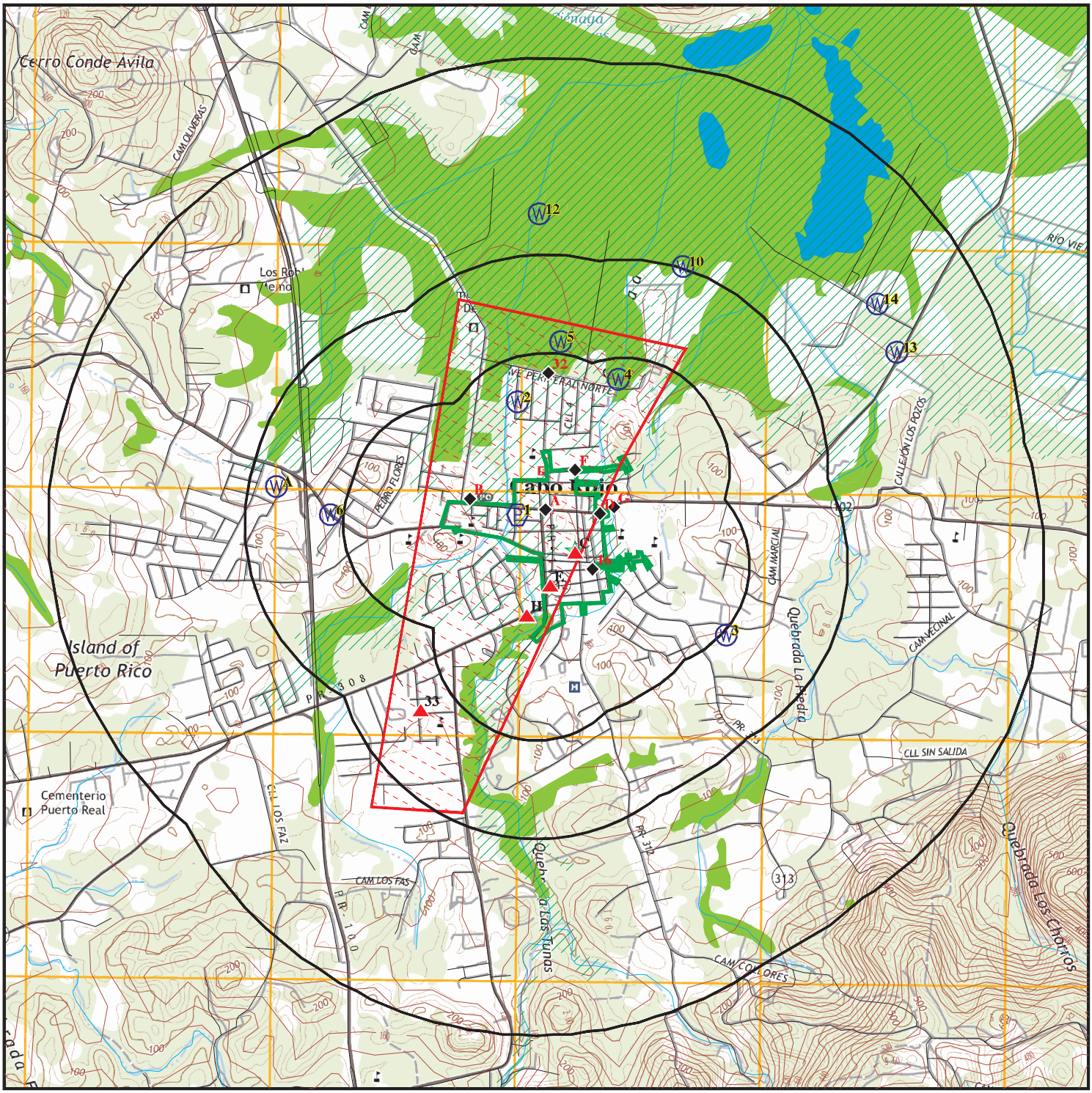
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SIT-GO SERVICE STATI Facility ID: 86-0665	SALVADOR BRAU (65	0 - 1/8 (0.000 mi.)	E11	34
SHELL 804215 Facility ID: 86-0665	SALVADOR BRAU (65	0 - 1/8 (0.000 mi.)	E12	34
Not reported Facility ID: 86-0665	SALVADOR BRAU (65	0 - 1/8 (0.000 mi.)	E13	34

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 21 records.

Site Name	Database(s)
METALES RAMOS	SEMS-ARCHIVE, LEAD SMELTERS
CUTLER HAMMER DE PR INC	SEMS, RCRA NonGen / NLR
L&R AUTO AND TRUCK REPAIR	SEMS
AUTO PIEZAS JAVY	SEMS
PRIDCO	SEMS, RCRA NonGen / NLR
CABO ROJO SOLID WASTE DISPOSAL	SEMS-ARCHIVE
	LUST
JOSE D. VELEZ S/S	LUST
NORYLUZ VELEZ S/S 654	LUST
TEXACO #674 (BOQUERON S/S)	LUST
TEXACO #667/JUAN APONTE	LUST
LAS ARENAS S/S	LUST
SHELL #1937	LUST
GPR #5221	LUST
TEXACO #647	LUST
CABO ROJO S/S #646	UST
CABO ROJO C.O.	UST
CABO ROJO LANDFILL	FINDS, ECHO
BETTERECYCLING CORPORATION - CABO	FINDS
RODRIGUEZ ASPHALT, LLC - CABO ROJO	FINDS
RODRIGUEZ ASPHALT, LLC - CABO ROJO	ECHO

OVERVIEW MAP - 7365109.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Cabo Rojo Streets	CLIENT:	AVA Environmental Consultants Inc.
ADDRESS:	Cabo Rojo Cabo Rojo PR 00623	CONTACT:	Augusto Velazquez
LAT/LONG:	18.086639 / 67.145742	INQUIRY #:	7365109.2s
		DATE:	June 15, 2023 9:27 am Report Prepared on August 2023

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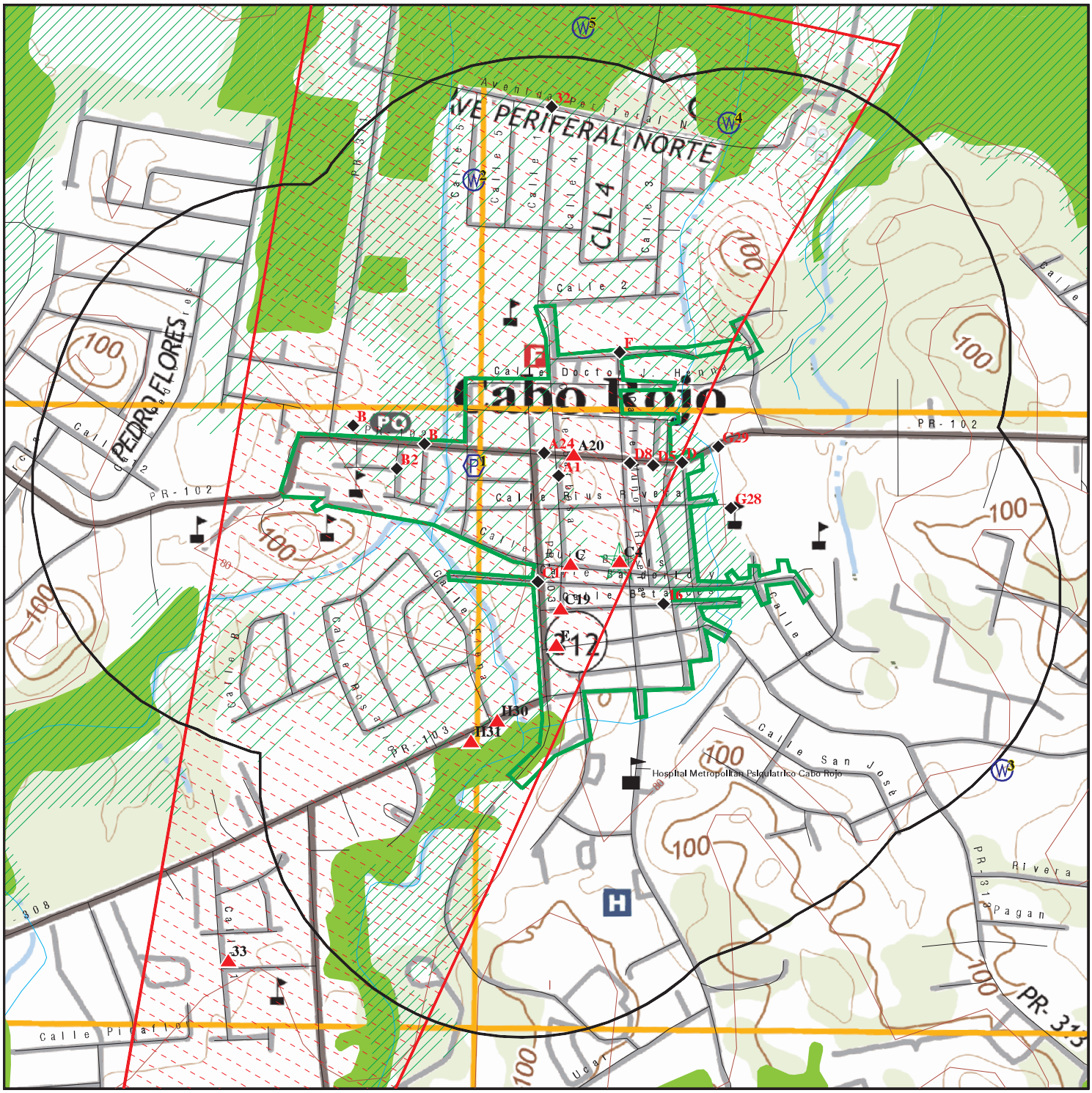
DETAIL MAP - 7365109.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

National Wetland Inventory

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Cabo Rojo Streets	CLIENT: AVA Environmental Consultants Inc.
ADDRESS: Cabo Rojo Cabo Rojo PR 00623	CONTACT: Augusto Velazquez
LAT/LONG: 18.086639 / 67.145742	INQUIRY #: 7365109.2s DATE: June 15, 2023 9:27 am Report Prepared on August 2023

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		1	0	0	0	NR	1
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		6	1	1	NR	NR	8
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		1	0	NR	NR	NR	1
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		1	0	0	NR	NR	1
US INST CONTROLS	0.500		1	0	0	NR	NR	1
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
Lists of state- and tribal hazardous waste facilities								
SHWS	N/A		N/A	N/A	N/A	N/A	N/A	N/A
Lists of state and tribal leaking storage tanks								
LUST	0.500		2	0	0	NR	NR	2
INDIAN LUST	0.500		0	0	0	NR	NR	0
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.250		1	0	NR	NR	NR	1
INDIAN UST	0.250		0	0	NR	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	0.001		0	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		2	0	NR	NR	NR	2
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		1	0	0	0	NR	1
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		1	NR	NR	NR	NR	1
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		1	NR	NR	NR	NR	1
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		14	NR	NR	NR	NR	14
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	0.001		9	NR	NR	NR	NR	9
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PFAS NPL	0.250		0	0	NR	NR	NR	0
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0
PFAS TSCA	0.250		0	0	NR	NR	NR	0
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0
PFAS ECHO FIRE TRAINING	0.250		0	0	NR	NR	NR	0
PFAS PART 139 AIRPORT	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
PFAS TRIS	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		2	NR	NR	NR	NR	2
EDR Hist Cleaner	0.125		1	NR	NR	NR	NR	1
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LUST	0.001		3	NR	NR	NR	NR	3
- Totals --		0	47	1	1	0	0	49

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

N/A = This State does not maintain a SHWS list. See the Federal CERCLIS list.

NPL **CABO ROJO GROUND WATER CONTAMINATION** **NPL** **1012209758**
Region **CROSS STR. CALLE BARBOSA & CALLE DEDIEGO** **SEMS** **PRN000206319**
CABO ROJO, PR 00623 **US ENG CONTROLS**
< 1/8 **US INST CONTROLS**
1 ft. **ROD**
PRP

NPL:

EPA Region:	2
EPA ID:	PRN000206319
Site ID:	206319
Name:	CABO ROJO GROUND WATER CONTAMINATION
Address:	CROSS STR. CALLE BARBOSA & CALLE DEDIEGO
City,State,Zip:	CABO ROJO, PR 00623
Federal:	N
Final Date:	2011-03-10 00:00:00
Latitude:	18.090725
Longitude:	-67.148325
Site Score:	50
NAI:	Not reported
Native American Entity:	Not reported

Narr:

Site Name:	Cabo Rojo Ground Water Contamination
Site EPA ID:	PRN000206319
Listing Date:	3/10/2011
Site Score:	50
Federal Facility Indicator:	No
Site List URL:	https://semspub.epa.gov/src/document/02/363179
Site Progress URL:	https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0206319
Federal Register URL:	http://www.gpo.gov/fdsys/pkg/FR-2011-03-10/pdf/2011-5337.pdf
Site Location URL:	https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=33cebcdfdd1b4c3a8b51d416956c41f1&query=Superfund_National_Priorities_List__NPL__Sites_with_Status_Information_7557,SITE_EPA_ID=%27PRN000206319%27

SEMS:

Site ID:	0206319
EPA ID:	PRN000206319
Name:	CABO ROJO GROUND WATER CONTAMINATION
Address:	CROSS STR. CALLE BARBOSA & CALLE DEDIEGO
Address 2:	Not reported
City,State,Zip:	CABO ROJO, PR 00623
Cong District:	98
FIPS Code:	72023
Latitude:	18.090725
Longitude:	-67.148325
FF:	N
NPL:	Currently on the Final NPL
Non NPL Status:	Not reported

SEMS Detail:

Region:	02
Site ID:	0206319
EPA ID:	PRN000206319
Site Name:	CABO ROJO GROUND WATER CONTAMINATION
NPL:	F
FF:	N
OU:	00

CABO ROJO GROUND WATER CONTAMINATION (Continued) **1012209758**

Action Code:	DS
Action Name:	DISCVRY
SEQ:	1
Start Date:	Not reported
Finish Date:	2007-03-15 04:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0206319
EPA ID:	PRN000206319
Site Name:	CABO ROJO GROUND WATER CONTAMINATION
NPL:	F
FF:	N
OU:	00
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	Not reported
Finish Date:	2007-12-17 05:00:00
Qual:	H
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0206319
EPA ID:	PRN000206319
Site Name:	CABO ROJO GROUND WATER CONTAMINATION
NPL:	F
FF:	N
OU:	00
Action Code:	HR
Action Name:	HAZRANK
SEQ:	1
Start Date:	Not reported
Finish Date:	2010-10-21 04:00:00
Qual:	O
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0206319
EPA ID:	PRN000206319
Site Name:	CABO ROJO GROUND WATER CONTAMINATION
NPL:	F
FF:	N
OU:	00
Action Code:	NP
Action Name:	PROPOSED
SEQ:	1
Start Date:	Not reported
Finish Date:	2010-10-21 04:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0206319
EPA ID:	PRN000206319
Site Name:	CABO ROJO GROUND WATER CONTAMINATION

CABO ROJO GROUND WATER CONTAMINATION (Continued) **1012209758**

NPL:	F
FF:	N
OU:	01
Action Code:	CO
Action Name:	RI/FS
SEQ:	1
Start Date:	2011-03-10 05:00:00
Finish Date:	2019-05-09 04:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	02
Site ID:	0206319
EPA ID:	PRN000206319
Site Name:	CABO ROJO GROUND WATER CONTAMINATION
NPL:	F
FF:	N
OU:	00
Action Code:	NF
Action Name:	NPL FINL
SEQ:	1
Start Date:	Not reported
Finish Date:	2011-03-10 05:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	02
Site ID:	0206319
EPA ID:	PRN000206319
Site Name:	CABO ROJO GROUND WATER CONTAMINATION
NPL:	F
FF:	N
OU:	01
Action Code:	TA
Action Name:	TECH ASSIST
SEQ:	1
Start Date:	2013-04-12 04:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	02
Site ID:	0206319
EPA ID:	PRN000206319
Site Name:	CABO ROJO GROUND WATER CONTAMINATION
NPL:	F
FF:	N
OU:	01
Action Code:	MA
Action Name:	ST COOP
SEQ:	1
Start Date:	2013-08-07 04:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	02

CABO ROJO GROUND WATER CONTAMINATION (Continued) **1012209758**

Site ID: 0206319
EPA ID: PRN000206319
Site Name: CABO ROJO GROUND WATER CONTAMINATION
NPL: F
FF: N
OU: 01
Action Code: RO
Action Name: ROD
SEQ: 1
Start Date: 2019-05-09 04:00:00
Finish Date: 2019-05-09 04:00:00
Qual: R
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206319
EPA ID: PRN000206319
Site Name: CABO ROJO GROUND WATER CONTAMINATION
NPL: F
FF: N
OU: 01
Action Code: RD
Action Name: RD
SEQ: 1
Start Date: 2020-05-29 05:00:00
Finish Date: Not reported
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206319
EPA ID: PRN000206319
Site Name: CABO ROJO GROUND WATER CONTAMINATION
NPL: F
FF: N
OU: 01
Action Code: BE
Action Name: PRP RD
SEQ: 1
Start Date: 2021-09-20 05:00:00
Finish Date: Not reported
Qual: Not reported
Current Action Lead: EPA Ovrsght

SIte:
Name: CABO ROJO GROUND WATER CONTAMINATION
Address: CROSS STR. CALLE BARBOSA & CALLE DEDIEGO
Address 2: Not reported
City,State,Zip: CABO ROJO, PR 00623
Event Code: Not reported
Action Taken Date: 05/09/2019
EPA ID: PRN000206319
Action Name: Record of Decision
Action ID: 1
Operable Unit: 01
Contaminated Media: Groundwater

CABO ROJO GROUND WATER CONTAMINATION (Continued) **1012209758**

Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL
Superfund Alternative Agreement:	N
Latitude:	18.090725
Longitude:	-67.148325

Media:

EPA ID:	PRN000206319
Contaminated Media:	Groundwater
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	05/09/2019
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL
Superfund Alternative Agreement:	N
Latitude:	18.090725
Longitude:	-67.148325

EPA ID:	PRN000206319
Contaminated Media:	Free-phase NAPL
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	05/09/2019
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL
Superfund Alternative Agreement:	N
Latitude:	18.090725
Longitude:	-67.148325

EPA ID:	PRN000206319
Contaminated Media:	Groundwater
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	05/09/2019
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL

CABO ROJO GROUND WATER CONTAMINATION (Continued) **1012209758**

Superfund Alternative Agreement: N
Latitude: 18.090725
Longitude: -67.148325

EPA ID: PRN000206319
Contaminated Media: Groundwater
Action ID: 1
Operable Unit: 01
Action Name: Record of Decision
Action Taken Date: 05/09/2019
Event Code: Not reported
Contact Name: Not reported
Contact Telephone: Not reported
Event: Not reported
Federal Facility: N
Fiscal Year: 2019
NPL Status: Currently on the Final NPL
Superfund Alternative Agreement: N
Latitude: 18.090725
Longitude: -67.148325

EPA ID: PRN000206319
Contaminated Media: Groundwater
Action ID: 1
Operable Unit: 01
Action Name: Record of Decision
Action Taken Date: 05/09/2019
Event Code: Not reported
Contact Name: Not reported
Contact Telephone: Not reported
Event: Not reported
Federal Facility: N
Fiscal Year: 2019
NPL Status: Currently on the Final NPL
Superfund Alternative Agreement: N
Latitude: 18.090725
Longitude: -67.148325

EPA ID: PRN000206319
Contaminated Media: Groundwater
Action ID: 1
Operable Unit: 01
Action Name: Record of Decision
Action Taken Date: 05/09/2019
Event Code: Not reported
Contact Name: Not reported
Contact Telephone: Not reported
Event: Not reported
Federal Facility: N
Fiscal Year: 2019
NPL Status: Currently on the Final NPL
Superfund Alternative Agreement: N
Latitude: 18.090725
Longitude: -67.148325

EPA ID: PRN000206319
Contaminated Media: Groundwater

CABO ROJO GROUND WATER CONTAMINATION (Continued) **1012209758**

Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	05/09/2019
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL
Superfund Alternative Agreement:	N
Latitude:	18.090725
Longitude:	-67.148325

EPA ID:	PRN000206319
Contaminated Media:	Soil Gas
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	05/09/2019
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL
Superfund Alternative Agreement:	N
Latitude:	18.090725
Longitude:	-67.148325

EPA ID:	PRN000206319
Contaminated Media:	Groundwater
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	05/09/2019
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL
Superfund Alternative Agreement:	N
Latitude:	18.090725
Longitude:	-67.148325

EPA ID:	PRN000206319
Contaminated Media:	Groundwater
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	05/09/2019
Event Code:	Not reported
Contact Name:	Not reported

CABO ROJO GROUND WATER CONTAMINATION (Continued) **1012209758**

Contact Telephone: Not reported
Event: Not reported
Federal Facility: N
Fiscal Year: 2019
NPL Status: Currently on the Final NPL
Superfund Alternative Agreement: N
Latitude: 18.090725
Longitude: -67.148325

EPA ID: PRN000206319
Contaminated Media: Soil Gas
Action ID: 1
Operable Unit: 01
Action Name: Record of Decision
Action Taken Date: 05/09/2019
Event Code: Not reported
Contact Name: Not reported
Contact Telephone: Not reported
Event: Not reported
Federal Facility: N
Fiscal Year: 2019
NPL Status: Currently on the Final NPL
Superfund Alternative Agreement: N
Latitude: 18.090725
Longitude: -67.148325

EPA ID: PRN000206319
Contaminated Media: Groundwater
Action ID: 1
Operable Unit: 01
Action Name: Record of Decision
Action Taken Date: 05/09/2019
Event Code: Not reported
Contact Name: Not reported
Contact Telephone: Not reported
Event: Not reported
Federal Facility: N
Fiscal Year: 2019
NPL Status: Currently on the Final NPL
Superfund Alternative Agreement: N
Latitude: 18.090725
Longitude: -67.148325

EPA ID: PRN000206319
Contaminated Media: Soil
Action ID: 1
Operable Unit: 01
Action Name: Record of Decision
Action Taken Date: 05/09/2019
Event Code: Not reported
Contact Name: Not reported
Contact Telephone: Not reported
Event: Not reported
Federal Facility: N
Fiscal Year: 2019
NPL Status: Currently on the Final NPL
Superfund Alternative Agreement: N

CABO ROJO GROUND WATER CONTAMINATION (Continued) **1012209758**

Latitude:	18.090725
Longitude:	-67.148325
EPA ID:	PRN000206319
Contaminated Media:	Groundwater
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	05/09/2019
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL
Superfund Alternative Agreement:	N
Latitude:	18.090725
Longitude:	-67.148325
EPA ID:	PRN000206319
Contaminated Media:	Soil
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	05/09/2019
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL
Superfund Alternative Agreement:	N
Latitude:	18.090725
Longitude:	-67.148325
EPA ID:	PRN000206319
Contaminated Media:	Soil
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	05/09/2019
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL
Superfund Alternative Agreement:	N
Latitude:	18.090725
Longitude:	-67.148325
EPA ID:	PRN000206319
Contaminated Media:	Free-phase NAPL
Action ID:	1

CABO ROJO GROUND WATER CONTAMINATION (Continued) **1012209758**

Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	05/09/2019
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL
Superfund Alternative Agreement:	N
Latitude:	18.090725
Longitude:	-67.148325

EPA ID:	PRN000206319
Contaminated Media:	Soil Gas
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	05/09/2019
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL
Superfund Alternative Agreement:	N
Latitude:	18.090725
Longitude:	-67.148325

EPA ID:	PRN000206319
Contaminated Media:	Soil
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	05/09/2019
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL
Superfund Alternative Agreement:	N
Latitude:	18.090725
Longitude:	-67.148325

US INST CONTROLS:

Name:	CABO ROJO GROUND WATER CONTAMINATION
Address:	CROSS STR. CALLE BARBOSA & CALLE DEDIEGO
Address 2:	Not reported
City,State,Zip:	CABO ROJO, PR 00623
EPA ID:	PRN000206319
Action Name:	Record of Decision
Action ID:	1

CABO ROJO GROUND WATER CONTAMINATION (Continued) **1012209758**

Operable Unit:	01
Actual Date:	05/09/2019
Contaminated Media:	Groundwater
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	2019
NPL Status:	Currently on the Final NPL
Superfund Alternative Agreement:	N
Latitude:	18.090725
Longitude:	-67.148325

ROD:

Name:	CABO ROJO GROUND WATER CONTAMINATION
Address:	CROSS STR. CALLE BARBOSA & CALLE DEDIEGO
City,State,Zip:	CABO ROJO, PR 00623
EPA ID:	PRN000206319
RG:	2
Site ID:	206319
Action:	GOVT Decision Document (ROD)
Operable Unit Number:	ENTIRE SITE
SEQ ID:	1
Action Completion:	2019-05-09 00:00:00
NPL Status:	Final
Non NPL Status:	Not reported

PRP:

PRP Name:	PUERTO RICO INDUSTRIAL DEVELOPMENT CO.

A1 **DEPT OF ED - INES MARIA M DE MUNOZ MARIN** **FINDS** **1016238124**
CALLE BARBOSA FRENTE **ECHO** **N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 1 of 3 in cluster A

Relative: FINDS:
Lower Registry ID: 110007802182

Actual: Click Here for FRS Facility Detail Report:
60 ft.

Environmental Interest/Information System:
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1016238124
Registry ID:	110007802182
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110007802182
Name:	DEPT OF ED - INES MARIA M DE MUNOZ MARIN
Address:	CALLE BARBOSA FRENTE

DEPT OF ED - INES MARIA M DE MUNOZ MARIN (Continued) **1016238124**

City,State,Zip: CABO ROJO, PR 00623

B2 **ESCUELA LUIS MUNOZ MARIN I** **FINDS** **1016238876**
BARRIO PUEBLO NUEVO **ECHO** **N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 1 of 5 in cluster B

Relative: Lower

FINDS:
Registry ID: 110007812199

Actual: 52 ft.

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1016238876
Registry ID: 110007812199
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110007812199
Name: ESCUELA LUIS MUNOZ MARIN I
Address: BARRIO PUEBLO NUEVO
City,State,Zip: CABO ROJO, PR 00623

C3 **BORINCANO DRY CLEANING** **FINDS** **1010152069**
52 CALLE BRAU **N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 1 of 5 in cluster C

Relative: Higher

FINDS:
Registry ID: 110029528580

Actual: 66 ft.

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
SUPERFUND (NON-NPL)

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

C4 **#646 - CABO ROJO** **ICIS** **1019914599**
CARR 103 INT CARR 102 **N/A**
< 1/8 **CABO ROJO, PR 00622**
1 ft.

Site 2 of 5 in cluster C

Relative: ICIS:
Higher

Actual:
66 ft.

Enforcement Action ID:	02-2009-0011
FRS ID:	110043707067
Action Name:	Chevron Puerto Rico, LLC
Facility Name:	#646 - CABO ROJO
Facility Address:	CARR 103 INT CARR 102 CABO ROJO, PR 00622
Enforcement Action Type:	Civil Judicial Action
Facility County:	CABO ROJO
Program System Acronym:	ICIS
Enforcement Action Forum Desc:	Judicial
EA Type Code:	CIV
Facility SIC Code:	Not reported
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	18.086627
Longitude in Decimal Degrees:	-67.145735
Permit Type Desc:	Not reported
Program System Acronym:	1400018428
Facility NAICS Code:	Not reported
Tribal Land Code:	Not reported

Facility Name:	#646 - CABO ROJO
Address:	CARR 103 INT CARR 102
Tribal Indicator:	N
Fed Facility:	Not reported
NAIC Code:	Not reported
SIC Code:	Not reported

D5 **SANZ TROPICAL MFG CO INC** **FINDS** **1024414561**
62 CALLE CARBONELL **N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 1 of 5 in cluster D

Relative: FINDS:
Lower

Registry ID: 110070331716

Actual:
52 ft.

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
OSHA ESTABLISHMENT

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

D6 **CABO ROJO MUNICIPAL LANDFILL** **RCRA NonGen / NLR** **1009218466**
CARR303, KM1.4,BO LLANOS COSTA **PRS009000464**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 2 of 5 in cluster D

Relative: RCRA Listings:
Lower

Actual: Date Form Received by Agency: 20080101
52 ft. Handler Name: Cabo Rojo Municipal Landfill
Handler Address: CARR303, KM1.4,BO LLANOS COSTA
Handler City,State,Zip: CABO ROJO, PR 00623
EPA ID: PRS009000464
Contact Name: JOSE C ZAYAS
Contact Address: PO BOX 13487
Contact City,State,Zip: SAN JUAN, PR 00908
Contact Telephone: 787-273-7685
Contact Fax: Not reported
Contact Email: Not reported
Contact Title: Not reported
EPA Region: 02
Land Type: Municipal
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Not reported
State District Owner: Not reported
State District: Not reported
Mailing Address: PO BOX 13487
Mailing City,State,Zip: SAN JUAN, PR 00908
Owner Name: Not reported
Owner Type: Not reported
Operator Name: Not reported
Operator Type: Not reported
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: No
Small Quantity On-Site Burner Exemption: No
Smelting Melting and Refining Furnace Exemption: No
Underground Injection Control: No
Off-Site Waste Receipt: No
Universal Waste Indicator: No
Universal Waste Destination Facility: No
Federal Universal Waste: No
Active Site State-Reg Handler: ---
Federal Facility Indicator: Not reported
Hazardous Secondary Material Indicator: NN
Sub-Part K Indicator: Not reported
2018 GPRA Permit Baseline: Not on the Baseline
2018 GPRA Renewals Baseline: Not on the Baseline
202 GPRA Corrective Action Baseline: No
Subject to Corrective Action Universe: No
Non-TSDFs Where RCRA CA has Been Imposed Universe: No
Corrective Action Priority Ranking: No NCAPS ranking
Environmental Control Indicator: No
Institutional Control Indicator: No

CABO ROJO MUNICIPAL LANDFILL (Continued) **1009218466**

Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	Yes
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	Yes
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20091006
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Historic Generators:

Receive Date:	20060109
Handler Name:	CABO ROJO MUNICIPAL LANDFILL
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	20060108
Handler Name:	CABO ROJO MUNICIPAL LANDFILL
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator
State District Owner:	Pr
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	20080101
Handler Name:	CABO ROJO MUNICIPAL LANDFILL
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

CABO ROJO MUNICIPAL LANDFILL (Continued) **1009218466**

List of NAICS Codes and Descriptions:
NAICS Codes: No NAICS Codes Found

Has the Facility Received Notices of Violations:
Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported

CABO ROJO MUNICIPAL LANDFILL (Continued) **1009218466**

Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Unknown
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported

CABO ROJO MUNICIPAL LANDFILL (Continued) **1009218466**

Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - General
Date Violation was Determined:	20190708
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Evaluation Action Summary:

Evaluation Date:	20051118
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R2CFP
Evaluation Responsible Sub-Organization:	RCB
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

CABO ROJO MUNICIPAL LANDFILL (Continued) **1009218466**

Evaluation Date:	20200304
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	SIGNIFICANT NON-COMPLIER
Evaluation Responsible Person Identifier:	R2CFP
Evaluation Responsible Sub-Organization:	RCB
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20180426
Evaluation Responsible Agency:	EPA
Found Violation:	Undetermined
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R2ERG
Evaluation Responsible Sub-Organization:	CEPD
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20190708
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R2CFP
Evaluation Responsible Sub-Organization:	RCB
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

D7 **CABO ROJO MUNICIPAL LANDFILL** **FINDS 1018356593**
ROAD 303, KM 2.1 LLANOS COSTA WARD **ECHO N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 3 of 5 in cluster D

Relative: **Lower**
Actual: **52 ft.**

FINDS:
Registry ID: 110066904531

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting

CABO ROJO MUNICIPAL LANDFILL (Continued) **1018356593**

requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1018356593
Registry ID:	110066904531
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110066904531
Name:	CABO ROJO MUNICIPAL LANDFILL
Address:	ROAD 303, KM 2.1 LLANOS COSTA WARD
City,State,Zip:	CABO ROJO, PR 00623

D8 **CABO ROJO PROFESSIONAL DRY CLEANERS** **SEMS** **1015731871**
50 CALLE CARBONELL **RCRA-VSQG** **PRR000013433**
< 1/8 **CABO ROJO, PR**
1 ft.

Site 4 of 5 in cluster D

Relative: Lower
Actual: 53 ft.

SEMS:

Site ID:	0206056
EPA ID:	PRR000013433
Name:	CABO ROJO PROFESSIONAL DRY CLEANERS
Address:	50 CALLE CARBONELL
Address 2:	Not reported
City,State,Zip:	CABO ROJO, PR
Cong District:	Not reported
FIPS Code:	72023
Latitude:	+18.090305
Longitude:	-067.148223
FF:	N
NPL:	Not on the NPL
Non NPL Status:	Assessment Complete - Decision Needed

SEMS Detail:

Region:	02
Site ID:	0206056
EPA ID:	PRR000013433
Site Name:	CABO ROJO PROFESSIONAL DRY CLEANERS
NPL:	N
FF:	N
OU:	00
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	Not reported
Finish Date:	2007-04-26 04:00:00
Qual:	H
Current Action Lead:	EPA Perf

Region:	02
Site ID:	0206056
EPA ID:	PRR000013433
Site Name:	CABO ROJO PROFESSIONAL DRY CLEANERS
NPL:	N
FF:	N
OU:	00
Action Code:	HX

CABO ROJO PROFESSIONAL DRY CLEANERS (Continued) **1015731871**

Action Name: PRE-CERC
SEQ: 1
Start Date: Not reported
Finish Date: 2007-02-14 05:00:00
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206056
EPA ID: PRR000013433
Site Name: CABO ROJO PROFESSIONAL DRY CLEANERS
NPL: N
FF: N
OU: 00
Action Code: DS
Action Name: DISCVRY
SEQ: 1
Start Date: 2007-02-14 05:00:00
Finish Date: 2007-02-14 05:00:00
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206056
EPA ID: PRR000013433
Site Name: CABO ROJO PROFESSIONAL DRY CLEANERS
NPL: N
FF: N
OU: 00
Action Code: SI
Action Name: SI
SEQ: 1
Start Date: 2007-04-26 04:00:00
Finish Date: 2007-10-31 04:00:00
Qual: H
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206056
EPA ID: PRR000013433
Site Name: CABO ROJO PROFESSIONAL DRY CLEANERS
NPL: N
FF: N
OU: 00
Action Code: PJ
Action Name: RP EM REM
SEQ: 1
Start Date: 2012-03-20 04:00:00
Finish Date: 2012-05-23 05:00:00
Qual: S
Current Action Lead: EPA Ovrsght

RCRA Listings:
Date Form Received by Agency: 20080101
Handler Name: Cabo Rojo Professional Dry Cleaner Inc
Handler Address: 50 CARBONEL ST

CABO ROJO PROFESSIONAL DRY CLEANERS (Continued) **1015731871**

Handler City,State,Zip:	CABO ROJO, PR 00623-1247
EPA ID:	PRR000013433
Contact Name:	RAMON ROSADO-MEDINA
Contact Address:	PO BOX 1247
Contact City,State,Zip:	CABO ROJO, PR 00623-1247
Contact Telephone:	787-851-8590
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	02
Land Type:	Private
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	PO BOX 1247
Mailing City,State,Zip:	CABO ROJO, PR 00623-1247
Owner Name:	Ramon Rosado-Medina
Owner Type:	Private
Operator Name:	Ramon Rosado-Medina
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20091006

CABO ROJO PROFESSIONAL DRY CLEANERS (Continued) **1015731871**

Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	F001
Waste Description:	The Following Spent Halogenated Solvents Used In Degreasing: Tetrachloroethylene, Trichlorethylene, Methylene Chloride, 1,1,1-Trichloroethane, Carbon Tetrachloride And Chlorinated Fluorocarbons; All Spent Solvent Mixtures/Blends Used In Degreasing Containing, Before Use, A Total Of Ten Percent Or More (By Volume) Of One Or More Of The Above Halogenated Solvents Or Those Solvents Listed In F002, F004, And F005; And Still Bottoms From The Recovery Of These Spent Solvents And Spent Solvent Mixtures.
Waste Code:	U210
Waste Description:	Ethene, Tetrachloro- (Or) Tetrachloroethylene

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: RAMON ROSADO-MEDINA	
Legal Status:	Private
Date Became Current:	20010101
Date Ended Current:	Not reported
Owner/Operator Address:	PO BOX 1247
Owner/Operator City,State,Zip:	CABO ROJO, PR 00623-1247
Owner/Operator Telephone:	787-851-8590
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: RAMON ROSADO-MEDINA	
Legal Status:	Private
Date Became Current:	17760101
Date Ended Current:	Not reported
Owner/Operator Address:	PO BOX 1247
Owner/Operator City,State,Zip:	CABO ROJO, PR 00623-1247
Owner/Operator Telephone:	787-851-8590
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: RAMON ROSADO-MEDINA	
Legal Status:	Private
Date Became Current:	20010101
Date Ended Current:	Not reported
Owner/Operator Address:	PO BOX 1247
Owner/Operator City,State,Zip:	CABO ROJO, PR 00623-1247
Owner/Operator Telephone:	787-851-8590

CABO ROJO PROFESSIONAL DRY CLEANERS (Continued) **1015731871**

Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20060101
Handler Name: CABO ROJO PROFESSIONAL DRY CLEANER INC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Pr
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20080101
Handler Name: CABO ROJO PROFESSIONAL DRY CLEANER INC
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20010212
Handler Name: CABO ROJO PROFESSIONAL DRY CLEANER INC
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Codes: No NAICS Codes Found

Has the Facility Received Notices of Violations:
Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported

CABO ROJO PROFESSIONAL DRY CLEANERS (Continued) **1015731871**

Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Evaluation Action Summary:

Evaluation Date:	20160414
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R2KV
Evaluation Responsible Sub-Organization:	CEPD
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

D9 **CABO ROJO LANDFILL** **FINDS 1014907989**
PR-303 KM 13.4 LLANOS COSTAS SECTOR LAS P **ECHO N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 5 of 5 in cluster D

Relative: **Lower**
Actual: **52 ft.**

FINDS:
Registry ID: 110043972779

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
LANDFILL GAS (LFG) RECOVERY

CABO ROJO LANDFILL (Continued) **1014907989**

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.
ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1014907989
Registry ID:	110043972779
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110043972779
Name:	CABO ROJO LANDFILL
Address:	PR-303 KM 13.4 LLANOS COSTAS SECTOR LAS P
City,State,Zip:	CABO ROJO, PR 00623

C10 **BORINCANO DRY CLEANING** **SEMS** **1010082266**
52 CALLE BRAU **PRN000206072**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 3 of 5 in cluster C

Relative: Higher
Actual: 66 ft.

SEMS:

Site ID:	0206072
EPA ID:	PRN000206072
Name:	BORINCANO DRY CLEANING
Address:	52 CALLE BRAU
Address 2:	Not reported
City,State,Zip:	CABO ROJO, PR 00623
Cong District:	Not reported
FIPS Code:	Not reported
Latitude:	+18.088258
Longitude:	-067.147367
FF:	N
NPL:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

SEMS Detail:

Region:	02
Site ID:	0206072
EPA ID:	PRN000206072
Site Name:	BORINCANO DRY CLEANING
NPL:	N

BORINCANO DRY CLEANING (Continued) **1010082266**

FF:	N
OU:	00
Action Code:	HX
Action Name:	PRE-CERC
SEQ:	1
Start Date:	Not reported
Finish Date:	2007-02-26 05:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0206072
EPA ID:	PRN000206072
Site Name:	BORINCANO DRY CLEANING
NPL:	N
FF:	N
OU:	00
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	Not reported
Finish Date:	2007-04-26 04:00:00
Qual:	H
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0206072
EPA ID:	PRN000206072
Site Name:	BORINCANO DRY CLEANING
NPL:	N
FF:	N
OU:	00
Action Code:	SI
Action Name:	SI
SEQ:	1
Start Date:	Not reported
Finish Date:	2007-12-04 05:00:00
Qual:	N
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0206072
EPA ID:	PRN000206072
Site Name:	BORINCANO DRY CLEANING
NPL:	N
FF:	N
OU:	00
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1
Start Date:	2007-02-26 05:00:00
Finish Date:	2007-02-26 05:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0206072

BORINCANO DRY CLEANING (Continued) **1010082266**

EPA ID:	PRN000206072
Site Name:	BORINCANO DRY CLEANING
NPL:	N
FF:	N
OU:	00
Action Code:	DS
Action Name:	DISCVRY
SEQ:	2
Start Date:	2007-02-26 05:00:00
Finish Date:	2007-02-26 05:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

E11 **SIT-GO SERVICE STATION** **RGA LUST** **S116438763**
SALVADOR BRAU (65 **N/A**
< 1/8 **CABO ROJO, PR**
1 ft.

Site 1 of 6 in cluster E

Relative: RGA LUST:
Higher

2008	SIT-GO SERVICE STATION	SALVADOR BRAU (65

Actual:
70 ft.

2007	SIT-GO SERVICE STATION	SALVADOR BRAU (65

E12 **SHELL 804215** **RGA LUST** **S116438572**
SALVADOR BRAU (65 **N/A**
< 1/8 **CABO ROJO, PR**
1 ft.

Site 2 of 6 in cluster E

Relative: RGA LUST:
Higher

2010	SHELL 804215	SALVADOR BRAU (65

Actual:
70 ft.

2003	SHELL 804215	SALVADOR BRAU (65
2002	SHELL 804215	SALVADOR BRAU (65
2001	SHELL 804215	SALVADOR BRAU (65

E13 **RGA LUST** **S116438401**
SALVADOR BRAU (65 **N/A**
< 1/8 **CABO ROJO, PR**
1 ft.

Site 3 of 6 in cluster E

Relative: RGA LUST:
Higher

2006	SALVADOR BRAU (65

Actual:
70 ft.

2005	SALVADOR BRAU (65

E14 **CABO ROJO SS 804215** **RCRA NonGen / NLR** **1001120645**
CALLE SALVADOR BRAU 65 **PRR000003707**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 4 of 6 in cluster E

Relative: RCRA Listings:
Higher

Actual:
70 ft.

Date Form Received by Agency:	20080101
Handler Name:	Cabo Rojo Ss 804215
Handler Address:	CALLE SALVADOR BRAU 65
Handler City,State,Zip:	CABO ROJO, PR 00623-3410
EPA ID:	PRR000003707
Contact Name:	Not reported
Contact Address:	PO BOX 366697
Contact City,State,Zip:	SAN JUAN, PR 00936-6697
Contact Telephone:	Not reported
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	02
Land Type:	Private
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	PO BOX 366697
Mailing City,State,Zip:	SAN JUAN, PR 00936-6697
Owner Name:	Pablo M Carlo
Owner Type:	Private
Operator Name:	Pablo M Carlo
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No

CABO ROJO SS 804215 (Continued) **1001120645**

Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20150414
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D000
Waste Description:	Not Defined
Waste Code:	D001
Waste Description:	Ignitable Waste
Waste Code:	D018
Waste Description:	Benzene

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: PABLO M CARLO	
Legal Status:	Private
Date Became Current:	16000101
Date Ended Current:	Not reported
Owner/Operator Address:	SALVADOR BRAU 65
Owner/Operator City,State,Zip:	CABO ROJO, PR 00623
Owner/Operator Telephone:	787-851-1390
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name: PABLO M CARLO	
Legal Status:	Private
Date Became Current:	16000101
Date Ended Current:	Not reported
Owner/Operator Address:	SALVADOR BRAU 65
Owner/Operator City,State,Zip:	CABO ROJO, PR 00623
Owner/Operator Telephone:	787-851-1390
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name: PABLO M CARLO	
Legal Status:	Private
Date Became Current:	Not reported

CABO ROJO SS 804215 (Continued) **1001120645**

Date Ended Current:	Not reported
Owner/Operator Address:	SALVADOR BRAU 65
Owner/Operator City,State,Zip:	CABO ROJO, PR 00623
Owner/Operator Telephone:	787-851-1390
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	19990708
Handler Name: CABO ROJO SS 804215	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	20060101
Handler Name: CABO ROJO SS 804215	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Pr
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	20080101
Handler Name: CABO ROJO SS 804215	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	19960702
Handler Name: CABO ROJO SS 804215	
Federal Waste Generator Description:	Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No

CABO ROJO SS 804215 (Continued) **1001120645**

Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Codes: No NAICS Codes Found

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

E15 **SHELL 804215** **LUST** **S106917659**
SALVADOR BRAU (65 **N/A**
< 1/8 **CABO ROJO, PR**
1 ft.

Site 5 of 6 in cluster E

Relative: Higher
Actual: 70 ft.

PR LUST:
Name: SHELL 804215
Address: SALVADOR BRAU (65
City,State,Zip: CABO ROJO, PR
Facility ID: 86-0665
Status: INACTIVE
Released: Yes
Released Date: 28-Sep-04
How Known: UST Removal
Date Known: 3-Aug-01
Owner Name: Shell Company (P.R.) Limited

---

16 **CABO ROJO** **FINDS** **1015993406**
NO. 28 BETANCES STREET **ECHO** **N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Relative: Lower
Actual: 65 ft.

FINDS:
Registry ID: 110054103126

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

CABO ROJO (Continued) **1015993406**

ECHO:
Envid: 1015993406
Registry ID: 110054103126
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110054103126
Name: CABO ROJO
Address: NO. 28 BETANCES STREET
City,State,Zip: CABO ROJO, PR 00623

C17 **CABO ROJO SS 804215** **FINDS** **1016202827**
CALLE SALVADOR BRAU 65 **ECHO** **N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 4 of 5 in cluster C

Relative: Lower
Actual: 60 ft.

FINDS:
Registry ID: 110004892616

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1016202827
Registry ID: 110004892616
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110004892616
Name: CABO ROJO SS 804215
Address: CALLE SALVADOR BRAU 65
City,State,Zip: CABO ROJO, PR 00623

E18 **SIT-GO SERVICE STATION** **UST** **U003429844**
SALVADOR BRAU #65 **N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 6 of 6 in cluster E

Relative: Higher
Actual: 70 ft.

UST:
Facility ID: 2-860665
Tank Status: Permanently Out of Use
Substance Description: Gasoline

Facility ID: 2-860665
Tank Status: Permanently Out of Use
Substance Description: Gasoline

Facility ID: 2-860665
Tank Status: Permanently Out of Use
Substance Description: Used Oil

SIT-GO SERVICE STATION (Continued) **U003429844**

Facility ID: 2-860665
Tank Status: Currently In Use
Substance Description: Not reported

Facility ID: 2-860665
Tank Status: Currently In Use
Substance Description: Not reported

C19 **THE OLD CABORROJE?A** **FINDS** **1024427448**
CALLE BARBOSA #8 ESQUINA HENNA **N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 5 of 5 in cluster C

Relative: FINDS:
Higher Registry ID: 110070347974

Actual:
66 ft. Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
OSHA ESTABLISHMENT

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A20 **CABO ROJO PROFESSIONAL DRY CLEANER INC** **FINDS** **1004779228**
50 CARBONEL ST **ECHO** **N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 2 of 3 in cluster A

Relative: FINDS:
Higher Registry ID: 110004895962

Actual:
66 ft. Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.
SUPERFUND (NON-NPL)
AIR MINOR

CABO ROJO PROFESSIONAL DRY CLEANER INC (Continued) **1004779228**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1004779228
Registry ID: 110004895962
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110004895962
Name: CABO ROJO PROFESSIONAL DRY CLEANER INC
Address: 50 CARBONEL ST
City,State,Zip: CABO ROJO, PR 00623

B21 **PUEBLO NUEVO SS 804231** **FINDS** **1016239387**
CALLE CARBONELL ESQ **ECHO** **N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 2 of 5 in cluster B

Relative: Lower
Actual: 52 ft.

FINDS:
Registry ID: 110007817942

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1016239387
Registry ID: 110007817942
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110007817942
Name: PUEBLO NUEVO SS 804231
Address: CALLE CARBONELL ESQ
City,State,Zip: CABO ROJO, PR 00623

F22 **CENTRO DE TRANSMICIONES** **FINDS** **1010014792**
1 CALLE JOSE DE DIEGO **N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 1 of 2 in cluster F

Relative: Lower
Actual: 52 ft.

FINDS:
Registry ID: 110028288154

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
SUPERFUND (NON-NPL)

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

B23 **SANZ TROPICAL MFG CO INC** **FINDS** **1024403038**
CALLE CARBONELL 62 **N/A**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 3 of 5 in cluster B

Relative: FINDS:
Lower Registry ID: 110070317858

Actual:
52 ft. Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
OSHA ESTABLISHMENT

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A24 **BOQUERON COUNTRY CLUB** **FINDS** **1011851237**
ROAD 307, KM 8.1 **ECHO** **N/A**
< 1/8 **CABO ROJO, PR 00926**
1 ft.

Site 3 of 3 in cluster A

Relative: FINDS:
Lower Registry ID: 110037118106

Actual:
52 ft. Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1011851237
Registry ID: 110037118106
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110037118106
Name: BOQUERON COUNTRY CLUB
Address: ROAD 307, KM 8.1
City,State,Zip: CABO ROJO, PR 00926

F25 **CENTRO DE TRANSMICIONES** **SEMS** **1010082311**
1 CALLE JOSE DE DIEGO **PRN000206063**
< 1/8 **CABO ROJO, PR 00623**
1 ft.

Site 2 of 2 in cluster F

Relative: SEMS:
Lower Site ID: 0206063
EPA ID: PRN000206063

Actual:
52 ft. Name: CENTRO DE TRANSMICIONES
Address: 1 CALLE JOSE DE DIEGO
Address 2: Not reported

CENTRO DE TRANSMICIONES (Continued) **1010082311**

City,State,Zip: CABO ROJO, PR 00623
Cong District: Not reported
FIPS Code: 72023
Latitude: +18.091846
Longitude: -067.144200
FF: N
NPL: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

SEMS Detail:

Region: 02
Site ID: 0206063
EPA ID: PRN000206063
Site Name: CENTRO DE TRANSMICIONES
NPL: N
FF: N
OU: 00
Action Code: DS
Action Name: DISCVRY
SEQ: 1
Start Date: 2007-02-26 05:00:00
Finish Date: 2007-02-26 05:00:00
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206063
EPA ID: PRN000206063
Site Name: CENTRO DE TRANSMICIONES
NPL: N
FF: N
OU: 00
Action Code: HX
Action Name: PRE-CERC
SEQ: 1
Start Date: Not reported
Finish Date: 2007-02-26 05:00:00
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206063
EPA ID: PRN000206063
Site Name: CENTRO DE TRANSMICIONES
NPL: N
FF: N
OU: 00
Action Code: PA
Action Name: PA
SEQ: 1
Start Date: Not reported
Finish Date: 2007-04-26 04:00:00
Qual: H
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206063
EPA ID: PRN000206063

CENTRO DE TRANSMICIONES (Continued) **1010082311**

Site Name:	CENTRO DE TRANSMICIONES
NPL:	N
FF:	N
OU:	00
Action Code:	SI
Action Name:	SI
SEQ:	1
Start Date:	Not reported
Finish Date:	2008-01-07 05:00:00
Qual:	N
Current Action Lead:	EPA Perf

B26 **SHELL 4231** **LUST** **S103553848**
WNW **CALLE CARBONELL 86** **N/A**
< 1/8 **CABO ROJO, PR**
0.010 mi.
55 ft. **Site 4 of 5 in cluster B**

Relative: PR LUST:
Lower

Name:	SHELL 4231
Address:	CALLE CARBONELL 86
City,State,Zip:	CABO ROJO, PR
Facility ID:	86-0685
Status:	INACTIVE
Released:	Yes
Released Date:	28-Dec-01
How Known:	Product in MW
Date Known:	23-May-97
Owner Name:	Shell Company (P.R.) Limited

Actual:
52 ft.

B27 **RAMIREZ LUGO SAMUEL** **EDR Hist Auto** **1021357900**
WNW **86 CARBONELL ST** **N/A**
< 1/8 **CABO ROJO, PR 00623**
0.010 mi.
55 ft. **Site 5 of 5 in cluster B**

Relative: EDR Hist Auto
Lower

Actual:
52 ft.

Year:	Name:	Type:
1989	RAMIREZ LUGO SAMUEL	Gasoline Service Stations, NEC
1990	RAMIREZ LUGO SAMUEL	Gasoline Service Stations, NEC

G28 **ACEVEDO MATOS EDWIN** **EDR Hist Cleaner** **1019920886**
ENE **1 CALLE RIUS RIVERA** **N/A**
< 1/8 **CABO ROJO, PR 00623**
0.016 mi.
82 ft. **Site 1 of 2 in cluster G**

Relative: EDR Hist Cleaner
Lower

Actual:
64 ft.

Year:	Name:	Type:
1995	ACEVEDO MATOS EDWIN	Drycleaning Plants, Except Rugs
2000	ACEVEDO MATOS EDWIN	Drycleaning Plants, Except Rugs
2001	ACEVEDO MATOS EDWIN	Drycleaning Plants, Except Rugs

ACEVEDO MATOS EDWIN (Continued) **1019920886**

2002	ACEVEDO MATOS EDWIN	Drycleaning Plants, Except Rugs
2003	ACEVEDO MATOS EDWIN	Drycleaning Plants, Except Rugs
2004	ACEVEDO MATOS EDWIN	Drycleaning Plants, Except Rugs

G29 **RAMIREZ LUGO SAMUEL** **EDR Hist Auto** **1020658727**
NE **86 CALLE CARBONELL** **N/A**
< 1/8 **CABO ROJO, PR 00623**
0.019 mi.
98 ft. **Site 2 of 2 in cluster G**

Relative: EDR Hist Auto
Lower

Actual:
65 ft.

Year:	Name:	Type:
1991	RAMIREZ LUGO SAMUEL	Gasoline Service Stations, NEC
1992	RAMIREZ LUGO SAMUEL	Gasoline Service Stations, NEC
1993	RAMIREZ LUGO SAMUEL	Gasoline Service Stations, NEC
1994	RAMIREZ LUGO SAMUEL	Gasoline Service Stations, NEC

H30 **FUTURE BLINDS AUTOMOBILE COMMERCIAL AREA** **SEMS** **1010082268**
SW **ROAD 103, KM 4.1** **PRN000206082**
< 1/8 **CABO ROJO, PR 00623**
0.045 mi.
236 ft. **Site 1 of 2 in cluster H**

Relative: SEMS:
Higher

Actual:
66 ft.

Site ID:	0206082
EPA ID:	PRN000206082
Name:	FUTURE BLINDS AUTOMOBILE COMMERCIAL AREA
Address:	ROAD 103, KM 4.1
Address 2:	Not reported
City,State,Zip:	CABO ROJO, PR 00623
Cong District:	Not reported
FIPS Code:	Not reported
Latitude:	+18.097690
Longitude:	-067.132415
FF:	N
NPL:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

SEMS Detail:

Region:	02
Site ID:	0206082
EPA ID:	PRN000206082
Site Name:	FUTURE BLINDS AUTOMOBILE COMMERCIAL AREA
NPL:	N
FF:	N
OU:	00
Action Code:	HX
Action Name:	PRE-CERC
SEQ:	1
Start Date:	Not reported
Finish Date:	2007-03-26 04:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	02
Site ID:	0206082

FUTURE BLINDS AUTOMOBILE COMMERCIAL AREA (Continued) **1010082268**

EPA ID: PRN000206082
Site Name: FUTURE BLINDS AUTOMOBILE COMMERCIAL AREA
NPL: N
FF: N
OU: 00
Action Code: PA
Action Name: PA
SEQ: 1
Start Date: Not reported
Finish Date: 2007-04-26 04:00:00
Qual: H
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206082
EPA ID: PRN000206082
Site Name: FUTURE BLINDS AUTOMOBILE COMMERCIAL AREA
NPL: N
FF: N
OU: 00
Action Code: DS
Action Name: DISCVRY
SEQ: 1
Start Date: 2007-03-21 04:00:00
Finish Date: 2007-03-21 04:00:00
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206082
EPA ID: PRN000206082
Site Name: FUTURE BLINDS AUTOMOBILE COMMERCIAL AREA
NPL: N
FF: N
OU: 00
Action Code: SI
Action Name: SI
SEQ: 1
Start Date: Not reported
Finish Date: 2007-12-13 05:00:00
Qual: N
Current Action Lead: EPA Perf

H31 **RADIADORES W/PAPO QUINONES AUTO REPAIR SHOP** **SEMS** **1010082264**
SW **ROAD 103, KM 5.4** **PRN000206069**
< 1/8 **CABO ROJO, PR 00623**
0.051 mi.
269 ft. **Site 2 of 2 in cluster H**

Relative: SEMS:
Higher
Site ID: 0206069
Actual: EPA ID: PRN000206069
66 ft. Name: RADIADORES W/PAPO QUINONES AUTO REPAIR SHOP
Address: ROAD 103, KM 5.4
Address 2: Not reported
City,State,Zip: CABO ROJO, PR 00623
Cong District: Not reported

RADIADORES W/PAPO QUINONES AUTO REPAIR SHOP (Continued) **1010082264**

FIPS Code: 72023
Latitude: +18.090646
Longitude: -067.142131
FF: N
NPL: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

SEMS Detail:

Region: 02
Site ID: 0206069
EPA ID: PRN000206069
Site Name: RADIADORES W/PAPO QUINONES AUTO REPAIR SHOP
NPL: N
FF: N
OU: 00
Action Code: HX
Action Name: PRE-CERC
SEQ: 1
Start Date: Not reported
Finish Date: 2007-02-28 05:00:00
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206069
EPA ID: PRN000206069
Site Name: RADIADORES W/PAPO QUINONES AUTO REPAIR SHOP
NPL: N
FF: N
OU: 00
Action Code: DS
Action Name: DISCVRY
SEQ: 1
Start Date: 2007-02-27 05:00:00
Finish Date: 2007-02-27 05:00:00
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206069
EPA ID: PRN000206069
Site Name: RADIADORES W/PAPO QUINONES AUTO REPAIR SHOP
NPL: N
FF: N
OU: 00
Action Code: PA
Action Name: PA
SEQ: 1
Start Date: Not reported
Finish Date: 2007-04-26 04:00:00
Qual: H
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206069
EPA ID: PRN000206069
Site Name: RADIADORES W/PAPO QUINONES AUTO REPAIR SHOP
NPL: N

RADIADORES W/PAPO QUINONES AUTO REPAIR SHOP (Continued) **1010082264**

FF:	N
OU:	00
Action Code:	SI
Action Name:	SI
SEQ:	1
Start Date:	2007-08-01 04:00:00
Finish Date:	2007-12-05 05:00:00
Qual:	N
Current Action Lead:	EPA Perf

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32 North 1/8-1/4 0.199 mi. 1052 ft.

CENTRO DE ACOPIO (OBRAS PUBLICAS) **SEMS** **1010082262**
CALLE PERIFERAL NORTE FINAL **PRN000206066**
CABO ROJO, PR 00623

Relative: Lower

Actual: 43 ft.

SEMS:

Site ID:	0206066
EPA ID:	PRN000206066
Name:	CENTRO DE ACOPIO (OBRAS PUBLICAS)
Address:	CALLE PERIFERAL NORTE FINAL
Address 2:	Not reported
City,State,Zip:	CABO ROJO, PR 00623
Cong District:	Not reported
FIPS Code:	72023
Latitude:	+18.094688
Longitude:	-067.143873
FF:	N
NPL:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

SEMS Detail:

Region:	02
Site ID:	0206066
EPA ID:	PRN000206066
Site Name:	CENTRO DE ACOPIO (OBRAS PUBLICAS)
NPL:	N
FF:	N
OU:	00
Action Code:	HX
Action Name:	PRE-CERC
SEQ:	1
Start Date:	Not reported
Finish Date:	2007-02-26 05:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	02
Site ID:	0206066
EPA ID:	PRN000206066
Site Name:	CENTRO DE ACOPIO (OBRAS PUBLICAS)
NPL:	N
FF:	N
OU:	00
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1

CENTRO DE ACOPIO (OBRAS PUBLICAS) (Continued) **1010082262**

Start Date:	2007-02-26 05:00:00
Finish Date:	2007-02-26 05:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0206066
EPA ID:	PRN000206066
Site Name:	CENTRO DE ACOPIO (OBRAS PUBLICAS)
NPL:	N
FF:	N
OU:	00
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	Not reported
Finish Date:	2007-04-26 04:00:00
Qual:	H
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0206066
EPA ID:	PRN000206066
Site Name:	CENTRO DE ACOPIO (OBRAS PUBLICAS)
NPL:	N
FF:	N
OU:	00
Action Code:	SI
Action Name:	SI
SEQ:	1
Start Date:	Not reported
Finish Date:	2008-02-06 05:00:00
Qual:	N
Current Action Lead:	EPA Perf

33
SW
1/4-1/2
0.337 mi.
1777 ft.

ABANDONED MECHANIC **SEMS** **1010082253**
ROAD 100, KM 5.1 **PRN000206055**
CABO ROJO, PR 00623

Relative:
Higher

Actual:
80 ft.

SEMS:

Site ID:	0206055
EPA ID:	PRN000206055
Name:	ABANDONED MECHANIC
Address:	ROAD 100, KM 5.1
Address 2:	Not reported
City,State,Zip:	CABO ROJO, PR 00623
Cong District:	Not reported
FIPS Code:	72023
Latitude:	+18.109545
Longitude:	-067.160448
FF:	N
NPL:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

SEMS Detail:

ABANDONED MECHANIC (Continued) **1010082253**

Region:	02
Site ID:	0206055
EPA ID:	PRN000206055
Site Name:	ABANDONED MECHANIC
NPL:	N
FF:	N
OU:	00
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	Not reported
Finish Date:	2007-06-07 04:00:00
Qual:	N
Current Action Lead:	EPA Perf

Region:	02
Site ID:	0206055
EPA ID:	PRN000206055
Site Name:	ABANDONED MECHANIC
NPL:	N
FF:	N
OU:	00
Action Code:	HX
Action Name:	PRE-CERC
SEQ:	1
Start Date:	Not reported
Finish Date:	2007-02-08 05:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	02
Site ID:	0206055
EPA ID:	PRN000206055
Site Name:	ABANDONED MECHANIC
NPL:	N
FF:	N
OU:	00
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1
Start Date:	2007-02-08 05:00:00
Finish Date:	2007-02-08 05:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	02
Site ID:	0206055
EPA ID:	PRN000206055
Site Name:	ABANDONED MECHANIC
NPL:	N
FF:	N
OU:	00
Action Code:	NX
Action Name:	COMB PA/SI
SEQ:	1
Start Date:	2007-03-07 05:00:00
Finish Date:	2007-06-07 04:00:00

ABANDONED MECHANIC (Continued) **1010082253**

Qual: N
Current Action Lead: EPA Perf

Count: 21 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CABO ROJO	U003430808	CABO ROJO S/S #646	RD. 103 Y 102	00623	UST
CABO ROJO	1015731854	CUTLER HAMMER DE PR INC	RD 103 FOMENTO ST	00623	SEMS, RCRA NonGen / NLR
CABO ROJO	S103554065		CARR 301 KM 0.7, LAS ARENAS		LUST
CABO ROJO	S103553966	JOSE D. VELEZ S/S	CARR 1 KM 7.7		LUST
CABO ROJO	1027124302	CABO ROJO LANDFILL	CARR. PR-313, KM 13.4, LLANOS	00623	FINDS, ECHO
CABO ROJO	S106917757	NORYLUZ VELEZ S/S 654	CARR. 101, BO. BOQUERON		LUST
CABO ROJO	S103554025	TEXACO #674 (BOQUERON S/S)	CARR. 101 KM. 2.6		LUST
CABO ROJO	S103554026	TEXACO #667/JUAN APONTE	CARR. 102 KM. 23.9, BO. MONTE		LUST
CABO ROJO	S103554176	LAS ARENAS S/S	CARR. 101 KM. 16.7, BO. ARENAS		LUST
CABO ROJO	S106452760	SHELL #1937	CARR. 103 KM. 5.5		LUST
CABO ROJO	S104904904	GPR #5221	CARR. 301 KM. 5.5, BOQUERON		LUST
CABO ROJO	S106917762	TEXACO #647	CARR. 103, KM. 6.9		LUST
CABO ROJO	1023540053	BETTERECYCLING CORPORATION - CABO	PR-103, KM 0.6, RAMAL 331	00623	FINDS
CABO ROJO	U003431047	CABO ROJO C.O.	RD.102 KM 5.2 MONTE GRANDE	00623	UST
CABO ROJO	1026896539	RODRIGUEZ ASPHALT, LLC - CABO ROJO	PR-103 KM. 0.6 RAMAL 331 BAJUR	00623	ECHO
CABO ROJO	1027018175	RODRIGUEZ ASPHALT, LLC - CABO ROJO	PR-103 KM. 0.6 RAMAL 331 BAJUR	00623	FINDS
CABO ROJO	1010082263	L&R AUTO AND TRUCK REPAIR	ROAD 103; KM 4.0	00623	SEMS
CABO ROJO	1010082302	AUTO PIEZAS JAVY	ROAD 103, KM 7.1	00623	SEMS
CABO ROJO	1015731861	PRIDCO	ROAD 103, KM 7.3	00623	SEMS, RCRA NonGen / NLR
CABO ROJO	1008879682	METALES RAMOS	STATE ROAD 103, KM 2.3	00623	SEMS-ARCHIVE, LEAD SMELTERS
LLANOS COSTAS WARD	1003864206	CABO ROJO SOLID WASTE DISPOSAL	ROAD 301 KM 2.8	00623	SEMS-ARCHIVE

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: N/A
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: N/A
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: N/A
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 03/26/2023
Date Data Arrived at EDR: 03/28/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 03/28/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (212) 637-3660
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (212) 637-3660
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (212) 637-3660
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (212) 637-3660
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/08/2023
Date Data Arrived at EDR: 02/09/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 82

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 08/21/2023
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/20/2023
Date Data Arrived at EDR: 02/21/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 02/20/2023
Date Data Arrived at EDR: 02/21/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/20/2023
Date Data Arrived at EDR: 03/21/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 70

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/21/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: Environmental Quality Board
Telephone: 787-767-8181
Last EDR Contact: 08/22/2005
Next Scheduled EDR Contact: 11/21/2005
Data Release Frequency: N/A

Lists of state and tribal leaking storage tanks

LUST: Leaking Underground Storage Tanks

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 09/24/2020
Date Data Arrived at EDR: 02/09/2021
Date Made Active in Reports: 05/04/2021
Number of Days to Update: 84

Source: Environmental Quality Board
Telephone: 787-767-8056
Last EDR Contact: 04/20/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 134

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/19/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 11/26/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 05/08/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 03/08/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 82
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 03/29/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST: Underground Storage Tank Facilities
Underground storage tank site locations.

Date of Government Version: 01/01/2008
Date Data Arrived at EDR: 03/26/2008
Date Made Active in Reports: 04/23/2008
Number of Days to Update: 28

Source: Environmental Quality Board
Telephone: 787-767-8056
Last EDR Contact: 04/13/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Semi-Annually

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/19/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 134

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

Lists of state and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/13/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 04/06/2023
Date Data Arrived at EDR: 04/13/2023
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/08/2023
Next Scheduled EDR Contact: 09/25/2023
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 04/19/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/12/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 04/27/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 01/06/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 8

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 01/06/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 8

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/19/2023
Date Data Arrived at EDR: 03/21/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 70

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/21/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (212) 637-3660
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 02/01/2023
Date Data Arrived at EDR: 02/14/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 77

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 05/16/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 06/07/2021
Date Data Arrived at EDR: 07/13/2021
Date Made Active in Reports: 03/09/2022
Number of Days to Update: 239

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/11/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/03/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 02/03/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/11/2023
Next Scheduled EDR Contact: 08/21/2023
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/13/2023
Date Data Arrived at EDR: 03/21/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/21/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/01/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/04/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 06/14/2022
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 283

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/13/2023
Next Scheduled EDR Contact: 06/26/2023
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 02/16/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 75

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/19/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 01/17/2023
Date Data Arrived at EDR: 01/18/2023
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 91

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/18/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/27/2022
Date Data Arrived at EDR: 05/04/2022
Date Made Active in Reports: 05/10/2022
Number of Days to Update: 6
Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 06/12/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35
Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/20/2023
Date Data Arrived at EDR: 04/04/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 66
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/04/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 03/29/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/15/2023
Date Data Arrived at EDR: 03/21/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 70
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 04/13/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/22/2022
Number of Days to Update: 84
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 05/04/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 03/23/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 04/25/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 01/12/2023
Date Made Active in Reports: 04/07/2023
Number of Days to Update: 85

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/03/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/06/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 03/03/2023
Date Data Arrived at EDR: 03/03/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 98

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/24/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/02/2023
Date Data Arrived at EDR: 02/22/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 84

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/24/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 04/03/2023
Date Data Arrived at EDR: 04/04/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 66

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 05/24/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 01/07/2022
Date Data Arrived at EDR: 02/24/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 82

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/17/2023
Date Data Arrived at EDR: 03/17/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 74

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/13/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/02/2023
Date Data Arrived at EDR: 02/28/2023
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 24

Source: EPA
Telephone: (212) 637-3000
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 11/09/2021
Date Data Arrived at EDR: 10/20/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 82

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 04/27/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 03/25/2023
Date Data Arrived at EDR: 03/31/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 03/31/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 05/17/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/13/2023
Date Data Arrived at EDR: 02/14/2023
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 64

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/17/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Quarterly

PFAS NPL: Superfund Sites with PFAS Detections Information

EPA's Office of Land and Emergency Management and EPA Regional Offices maintain data describing what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment.

Date of Government Version: 06/07/2023
Date Data Arrived at EDR: 06/08/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 1

Source: Environmental Protection Agency
Telephone: 703-603-8895
Last EDR Contact: 06/08/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS FEDERAL SITES: Federal Sites PFAS Information

Several federal entities, such as the federal Superfund program, Department of Defense, National Aeronautics and Space Administration, Department of Transportation, and Department of Energy provided information for sites with known or suspected detections at federal facilities.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/07/2023
Number of Days to Update: 8

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS TSCA: PFAS Manufacture and Imports Information

EPA issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. EPA publishes non-confidential business information (non-CBI) and includes descriptive information about each site, corporate parent, production volume, other manufacturing information, and processing and use information.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS RCRA MANIFEST: PFAS Transfers Identified In the RCRA Database Listing

To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: PFAS, PFOA, PFOS, PERFL, AFFF, GENX, GEN-X (plus the VT waste codes). These keywords were searched for in the following text fields: Manifest handling instructions (MANIFEST_HANDLING_INSTR), Non-hazardous waste description (NON_HAZ_WASTE_DESCRIPTION), DOT printed information (DOT_PRINTED_INFORMATION), Waste line handling instructions (WASTE_LINE_HANDLING_INSTR), Waste residue comments (WASTE_RESIDUE_COMMENTS).

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 33

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS ATSDR: PFAS Contamination Site Location Listing

PFAS contamination site locations from the Department of Health & Human Services, Center for Disease Control & Prevention. ATSDR is involved at a number of PFAS-related sites, either directly or through assisting state and federal partners. As of now, most sites are related to drinking water contamination connected with PFAS production facilities or fire training areas where aqueous film-forming firefighting foam (AFFF) was regularly used.

Date of Government Version: 06/24/2020
Date Data Arrived at EDR: 03/17/2021
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 601

Source: Department of Health & Human Services
Telephone: 202-741-5770
Last EDR Contact: 04/20/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

PFAS WQP: Ambient Environmental Sampling for PFAS

The Water Quality Portal (WQP) is a part of a modernized repository storing ambient sampling data for all environmental media and tissue samples. A wide range of federal, state, tribal and local governments, academic and non-governmental organizations and individuals submit project details and sampling results to this public repository. The information is commonly used for research and assessments of environmental quality.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 33

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS NPDES: Clean Water Act Discharge Monitoring Information

Any discharger of pollutants to waters of the United States from a point source must have a National Pollutant Discharge Elimination System (NPDES) permit. The process for obtaining limits involves the regulated entity (permittee) disclosing releases in a NPDES permit application and the permitting authority (typically the state but sometimes EPA) deciding whether to require monitoring or monitoring with limits.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/07/2023
Number of Days to Update: 8

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS ECHO: Facilities in Industries that May Be Handling PFAS Listing

Regulators and the public have expressed interest in knowing which regulated entities may be using PFAS. EPA has developed a dataset from various sources that show which industries may be handling PFAS. Approximately 120,000 facilities subject to federal environmental programs have operated or currently operate in industry sectors with processes that may involve handling and/or release of PFAS.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/03/2023
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS ECHO FIRE TRAINING: Facilities in Industries that May Be Handling PFAS Listing

A list of fire training sites was added to the Industry Sectors dataset using a keyword search on the permitted facilitys name to identify sites where fire-fighting foam may have been used in training exercises. Additionally, you may view an example spreadsheet of the subset of fire training facility data, as well as the keywords used in selecting or deselecting a facility for the subset. as well as the keywords used in selecting or deselecting a facility for the subset. These keywords were tested to maximize accuracy in selecting facilities that may use fire-fighting foam in training exercises, however, due to the lack of a required reporting field in the data systems for designating fire training sites, this methodology may not identify all fire training sites or may potentially misidentify them.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/03/2023
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS PART 139 AIRPORT: All Certified Part 139 Airports PFAS Information Listing

Since July 1, 2006, all certified part 139 airports are required to have fire-fighting foam onsite that meet military specifications (MIL-F-24385) (14 CFR 139.317). To date, these military specification fire-fighting foams are fluorinated and have been historically used for training and extinguishing. The 2018 FAA Reauthorization Act has a provision stating that no later than October 2021, FAA shall not require the use of fluorinated AFFF. This provision does not prohibit the use of fluorinated AFFF at Part 139 civilian airports; it only prohibits FAA from mandating its use. The Federal Aviation Administration?s document AC 150/5210-6D - Aircraft Fire Extinguishing Agents provides guidance on Aircraft Fire Extinguishing Agents, which includes Aqueous Film Forming Foam (AFFF).

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/03/2023
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

AQUEOUS FOAM NRC: Aqueous Foam Related Incidents Listing

The National Response Center (NRC) serves as an emergency call center that fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. The spreadsheets posted to the NRC website contain initial incident data that has not been validated or investigated by a federal/state response agency. Response center calls from 1990 to the most recent complete calendar year where there was indication of Aqueous Film Forming Foam (AFFF) usage are included in this dataset. NRC calls may reference AFFF usage in the ?Material Involved? or ?Incident Description? fields.

Date of Government Version: 04/27/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/27/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System

Mineral Resources Data System

Date of Government Version: 08/23/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 98

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: No Update Planned

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS TRIS: List of PFAS Added to the TRI

Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) immediately added certain per- and polyfluoroalkyl substances (PFAS) to the list of chemicals covered by the Toxics Release Inventory (TRI) under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) and provided a framework for additional PFAS to be added to TRI on an annual basis.

Date of Government Version: 06/07/2023
Date Data Arrived at EDR: 06/08/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 1

Source: Environmental Protection Agency
Telephone: 202-566-0250
Last EDR Contact: 06/08/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Environmental Quality Board in Puerto Rico.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/04/2014
Number of Days to Update: 187

Source: Environmental Quality Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/18/2022
Number of Days to Update: 80

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/10/2022
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CABO ROJO STREETS
CABO ROJO
CABO ROJO, PR 00623

TARGET PROPERTY COORDINATES

Latitude (North):	18.086639 - 18° 5' 11.90''
Longitude (West):	67.145742 - 67° 8' 44.67''
Universal Tranverse Mercator:	Zone 19
UTM X (Meters):	696231.2
UTM Y (Meters):	2000636.5
Elevation:	66 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	12360454 PUERTO REAL, PR
Version Date:	2018

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

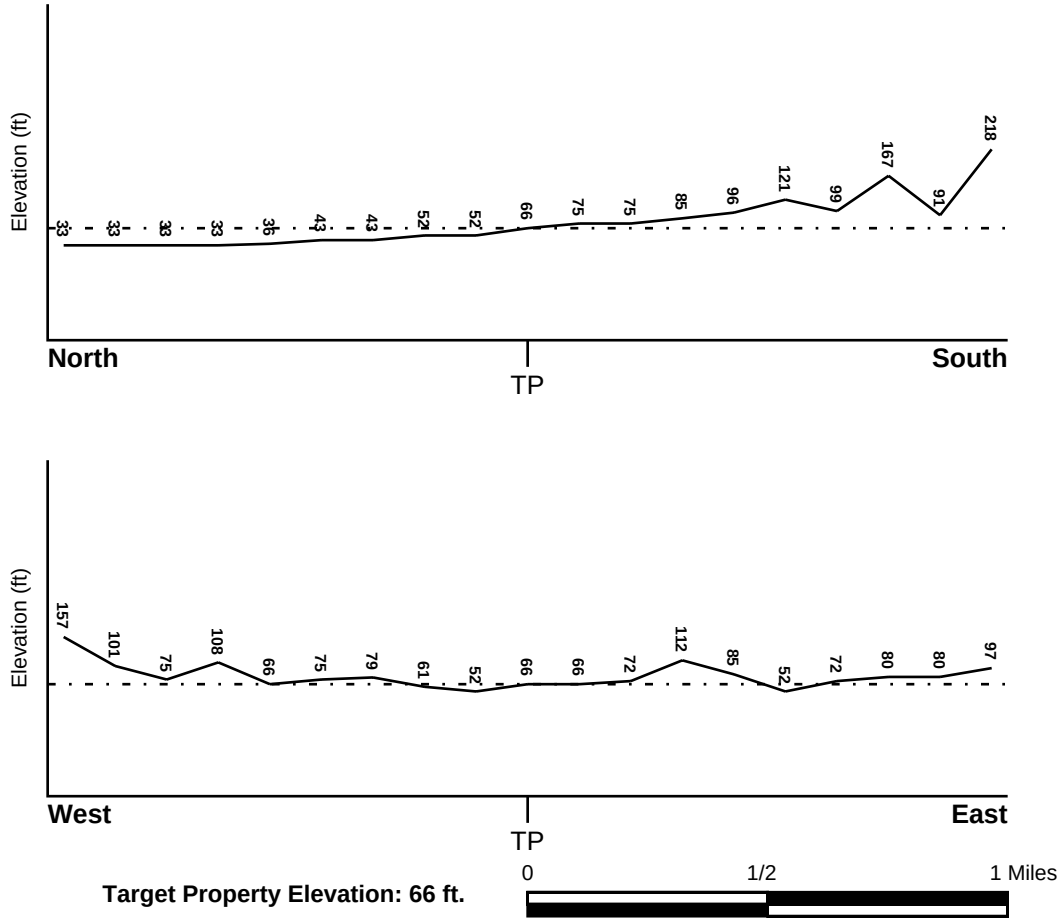
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General North

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
7200000197D	FEMA Q3 Flood data

Additional Panels in search area:	FEMA Source Type
Not Reported	

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era: -
System: -
Series: -
Code: N/A *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: CAGUABO

Soil Surface Texture: clay loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 10 inches

Depth to Bedrock Max: > 20 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	4 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 2.00 Min: 0.60	Max: 6.50 Min: 6.10
2	4 inches	10 inches	very gravelly - clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Clayey Gravel	Max: 2.00 Min: 0.60	Max: 6.50 Min: 6.10
3	10 inches	16 inches	weathered bedrock	Not reported	Not reported	Max: 0.20 Min: 0.01	Max: 0.00 Min: 0.00
4	16 inches	20 inches	unweathered bedrock	Not reported	Not reported	Max: 0.06 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: unweathered bedrock
clay
silty clay
silty clay loam

Surficial Soil Types: unweathered bedrock
clay
silty clay
silty clay loam

Shallow Soil Types: gravelly - clay
clay

Deeper Soil Types: loam
weathered bedrock

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile

FEDERAL USGS WELL INFORMATION

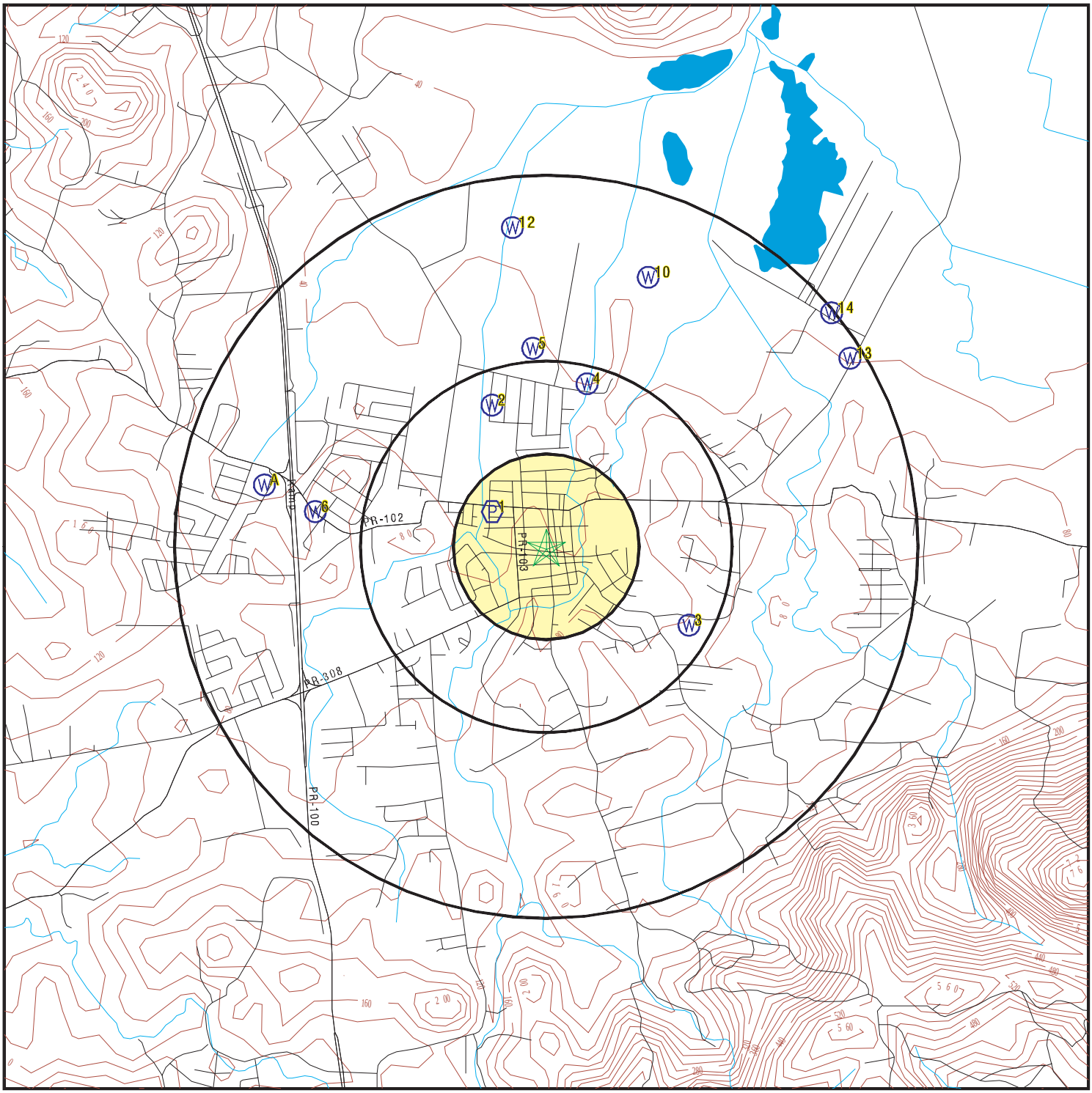
MAP ID	WELL ID	LOCATION FROM TP
2	USGS40001043888	1/4 - 1/2 Mile NNW
3	USGS40001043853	1/4 - 1/2 Mile ESE
4	USGS40001043892	1/4 - 1/2 Mile NNE
5	USGS40001043897	1/2 - 1 Mile North
6	USGS40001043872	1/2 - 1 Mile West
A7	USGS40001043877	1/2 - 1 Mile WNW
A8	USGS40001043878	1/2 - 1 Mile WNW
A9	USGS40001043879	1/2 - 1 Mile WNW
10	USGS40001043917	1/2 - 1 Mile NNE
A11	USGS40001043884	1/2 - 1 Mile WNW
12	USGS40001043951	1/2 - 1 Mile North
13	USGS40001043895	1/2 - 1 Mile ENE
14	USGS40001043902	1/2 - 1 Mile NE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	PR0312033	1/8 - 1/4 Mile WNW

Note: PWS System location is not always the same as well location.

PHYSICAL SETTING SOURCE MAP - 7365109.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location

SITE NAME:	Cabo Rojo Streets	CLIENT:	AVA Environmental Consultants Inc.
ADDRESS:	Cabo Rojo Cabo Rojo PR 00623	CONTACT:	Augusto Velazquez
		INQUIRY #:	7365109.2s
LAT/LONG:	18.086639 / 67.145742	DATE:	June 15, 2023 9:27 am Report Prepared on August 2023

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
WNW
1/8 - 1/4 Mile
Lower | **FRDS PWS** | **PR0312033**

Epa region:	02	State:	PR
Pwsid:	PR0312033	Pwsname:	SANTUARIO SCHOENSTATT
Cityserved:	Not Reported	Stateserved:	PR
Zipserved:	Not Reported	Fipscounty:	72023
Status:	Closed	Retpopsrvd:	25
Pwssvcconn:	6	Psource longname:	Groundwater
Pwstype:	TNCWS	Owner:	Private
Contact:	Not Reported	Contactorgname:	Not Reported
Contactphone:	787-851-5368	Contactaddress1:	P.R. 100 KM. 5.3 INT.
Contactaddress2:	CALLE PADRE JOSE KENTENICH		
Contactcity:	CABO ROJO	Contactstate:	PR
Contactzip:	00623	Pwsactivitycode:	I
PWS ID:	PR0312033	PWS type:	System Owner/Responsible Party
PWS name:	HNAS. MARIANAS SCHOENSTATT		
PWS address:	Not Reported	PWS city:	CABO ROJO
PWS state:	PR	PWS zip:	00623
PWS ID:	PR0312033	Activity status:	Active
Date system activated:	Not Reported	Date system deactivated:	Not Reported
Retail population:	00000025	System name:	SANTUARIO SCHOENSTATT
System address:	P.R. 100 KM. 5.3 INT.	System address:	CALLE PADRE JOSE KENTENICH
System city:	CABO ROJO	System state:	PR
System zip:	00623		
County FIPS:	Not Reported	City served:	CABO ROJO
Population served:	Under 101 Persons	Treatment:	Untreated
Latitude:	180524	Longitude:	0670854
Violation id:	6226403	Orig code:	S
State:	PR	Violation Year:	2003
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	23	Violation name:	Monitoring, Routine Major (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	09/01/2003
Cmp edt:	09/30/2003		

PWS currently has or had major violation(s) or enforcement:Yes

Violation ID:	9419513	Violation source ID:	Not Reported
PWS telephone:	Not Reported	Contaminant:	COLIFORM (TCR)
Violation type:	Monitoring, Routine Major (TCR)		
Violation start date:	010194	Violation end date:	013194
Violation period (months):	001	Violation awareness date:	Not Reported
Major violator:	Yes	Maximum contaminant level:	Not Reported
Number of required samples:	Not Reported	Number of samples taken:	Not Reported
Analysis method:	Not Reported	Analysis result:	Not Reported
Violation ID:	6226403	Orig Code:	S
Enforcemnt FY:	2004	Enforcement Action:	11/14/2003
Enforcement Detail:	St Violation/Reminder Notice		
Enforcement Category:	Informal		

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
2 **NNW** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40001043888**

Organization ID:	USGS-PR		
Organization Name:	USGS Puerto Rico Water Science Center		
Monitor Location:	VALDEZ WELL, CABO ROJO, PR		
Type:	Well	Description:	Not Reported
HUC:	21010003	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	1925	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	165
Well Hole Depth Units:	ft		

	Database	EDR ID Number
3 **ESE** **1/4 - 1/2 Mile** **Higher**	**FED USGS**	**USGS40001043853**

Organization ID:	USGS-PR		
Organization Name:	USGS Puerto Rico Water Science Center		
Monitor Location:	CABO ROJO MUN WELL, CABO ROJO, PR		
Type:	Well	Description:	Not Reported
HUC:	21010003	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	1939	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	95
Well Hole Depth Units:	ft		

	Database	EDR ID Number
4 **NNE** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40001043892**

Organization ID:	USGS-PR		
Organization Name:	USGS Puerto Rico Water Science Center		
Monitor Location:	CABO ROJO P1 WELL, CABO ROJO, PR		
Type:	Well	Description:	GROUND WATER NETWORK
HUC:	21010003	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Other aquifers
Formation Type:	Alluvium, Coastal	Aquifer Type:	Unconfined single aquifer
Construction Date:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	74	Level reading date:	2005-02-17
Feet below surface:	24.25	Feet to sea level:	Not Reported
Note:	Not Reported		

Level reading date:	2004-12-03	Feet below surface:	26.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-10-08	Feet below surface:	19.04
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-08-12	Feet below surface:	22.63
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-07-15	Feet below surface:	19.52
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-04-22	Feet below surface:	29.46
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-02-12	Feet below surface:	22.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-12-11	Feet below surface:	15.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-10-09	Feet below surface:	25.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-10-02	Feet below surface:	28.17
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-08-14	Feet below surface:	31.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-07-24	Feet below surface:	30.12
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-06-05	Feet below surface:	25.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-04-10	Feet below surface:	32.67
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	2003-02-12	Feet below surface:	28.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-12-04	Feet below surface:	20.35
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	2002-10-03	Feet below surface:	20.89
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-08-15	Feet below surface:	28.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-05-01	Feet below surface:	16.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-03-20	Feet below surface:	21.59
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-02-14	Feet below surface:	18.95
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	2002-01-28	Feet below surface:	18.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-12-17	Feet below surface:	13.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-11-19	Feet below surface:	16.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-10-16	Feet below surface:	14.91
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	2001-09-18	Feet below surface:	15.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-08-15	Feet below surface:	20.55
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-06-13	Feet below surface:	22.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-05-09	Feet below surface:	21.90
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	2001-05-09	Feet below surface:	21.91
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-04-24	Feet below surface:	31.81
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	2001-03-21	Feet below surface:	31.85
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	2001-02-27	Feet below surface:	29.60
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	2001-01-30	Feet below surface:	27.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-12-28	Feet below surface:	24.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-11-15	Feet below surface:	19.97
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	2000-10-11	Feet below surface:	20.10
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	2000-10-11	Feet below surface:	20.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-09-14	Feet below surface:	20.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-08-09	Feet below surface:	25.75

Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-07-28	Feet below surface:	25.81
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	2000-06-21	Feet below surface:	26.14
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	2000-05-31	Feet below surface:	26.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-04-14	Feet below surface:	34.72
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-03-31	Feet below surface:	34.27
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	2000-02-09	Feet below surface:	29.46
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	2000-01-21	Feet below surface:	27.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-12-22	Feet below surface:	23.26
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1999-10-26	Feet below surface:	27.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-08-17	Feet below surface:	22.07
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1999-07-20	Feet below surface:	23.74
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1999-06-17	Feet below surface:	28.86
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1999-05-18	Feet below surface:	28.10
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1999-04-12	Feet below surface:	22.60
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1999-03-16	Feet below surface:	22.30
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1999-02-19	Feet below surface:	21.47
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		

Level reading date:	1999-01-27	Feet below surface:	19.78
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1998-12-22	Feet below surface:	15.78
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1998-11-25	Feet below surface:	15.53
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1998-10-28	Feet below surface:	13.97
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1998-08-31	Feet below surface:	20.03
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1998-02-26	Feet below surface:	24.77
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1997-12-16	Feet below surface:	22.19
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1997-09-23	Feet below surface:	25.81
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1997-04-15	Feet below surface:	21.00
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1997-01-28	Feet below surface:	17.24
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1996-12-17	Feet below surface:	16.95
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1996-12-17	Feet below surface:	16.95
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1996-10-02	Feet below surface:	16.69
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1996-10-02	Feet below surface:	16.69
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1996-08-07	Feet below surface:	16.44
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1996-05-29	Feet below surface:	13.76
Feet to sea level:	Not Reported		

Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1996-04-04	Feet below surface:	16.52
Feet to sea level:	Not Reported		
Note:	Other conditions existed that would affect the measured water level.		
Level reading date:	1996-04-04	Feet below surface:	18.92
Feet to sea level:	Not Reported	Note:	Not Reported

5
North
1/2 - 1 Mile
Lower

FED USGS **USGS40001043897**

Organization ID:	USGS-PR		
Organization Name:	USGS Puerto Rico Water Science Center		
Monitor Location:	PIEZOMETER CABO ROJO 8, CABO ROJO, PR		
Type:	Well	Description:	Not Reported
HUC:	21010003	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	39
Well Depth Units:	ft	Well Hole Depth:	39
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	10	Level reading date:	1993-04-28
Feet below surface:	18.2	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1993-03-25	Feet below surface:	15.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-02-23	Feet below surface:	12.7
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-01-27	Feet below surface:	14.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-12-10	Feet below surface:	8.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-10-14	Feet below surface:	6.0
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-09-16	Feet below surface:	7.7
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-08-26	Feet below surface:	12.1
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-07-16	Feet below surface:	14.1
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-03-25	Feet below surface:	24.55
Feet to sea level:	Not Reported	Note:	Not Reported

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

6
West
1/2 - 1 Mile
Higher

FED USGS **USGS40001043872**

Organization ID:	USGS-PR		
Organization Name:	USGS Puerto Rico Water Science Center		
Monitor Location:	WELL, 3 C103 K3.9, CABO ROJO, PR		
Type:	Well		
Description:	THM SAMPLING SITES, DUMMY COORDINATES		
HUC:	21010003	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

A7
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40001043877**

Organization ID:	USGS-PR		
Organization Name:	USGS Puerto Rico Water Science Center		
Monitor Location:	FERNANDEZ 1 WELL, CABO ROJO, PR		
Type:	Well	Description:	Not Reported
HUC:	21010003	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	1957	Well Depth:	22
Well Depth Units:	ft	Well Hole Depth:	45
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1959-06-23
Feet below surface:	4.12	Feet to sea level:	Not Reported
Note:	Not Reported		

A8
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40001043878**

Organization ID:	USGS-PR		
Organization Name:	USGS Puerto Rico Water Science Center		
Monitor Location:	FERNANDEZ 2 WELL, CABO ROJO, PR		
Type:	Well	Description:	Not Reported
HUC:	21010003	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	1959	Well Depth:	21
Well Depth Units:	ft	Well Hole Depth:	40
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1959-06-23
Feet below surface:	5.53	Feet to sea level:	Not Reported
Note:	Not Reported		

A9
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40001043879**

Organization ID:	USGS-PR		
Organization Name:	USGS Puerto Rico Water Science Center		
Monitor Location:	FERNANDEZ 3 WELL, CABO ROJO, PR		
Type:	Well	Description:	Not Reported
HUC:	21010003	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	1957	Well Depth:	40
Well Depth Units:	ft	Well Hole Depth:	60
Well Hole Depth Units:	ft		

10
NNE
1/2 - 1 Mile
Lower

FED USGS **USGS40001043917**

Organization ID:	USGS-PR		
Organization Name:	USGS Puerto Rico Water Science Center		
Monitor Location:	PIEZOMETER CABO ROJO 5, CABO ROJO, PR		
Type:	Well	Description:	Not Reported
HUC:	21010003	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19920317	Well Depth:	25
Well Depth Units:	ft	Well Hole Depth:	25
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	10	Level reading date:	1993-04-28
Feet below surface:	6.6	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1993-03-25	Feet below surface:	6.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-02-23	Feet below surface:	6.3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-01-27	Feet below surface:	6.2
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-12-10	Feet below surface:	5.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-10-14	Feet below surface:	2.8
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-09-19	Feet below surface:	4.4

Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-08-26	Feet below surface:	5.8
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-07-16	Feet below surface:	6.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-03-18	Feet below surface:	8.92
Feet to sea level:	Not Reported	Note:	Not Reported

A11
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40001043884**

Organization ID:	USGS-PR		
Organization Name:	USGS Puerto Rico Water Science Center		
Monitor Location:	CABO ROJO P3 WELL, CABO ROJO, PR		
Type:	Well	Description:	Not Reported
HUC:	21010003	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	195801	Well Depth:	122
Well Depth Units:	ft	Well Hole Depth:	125
Well Hole Depth Units:	ft		

12
North
1/2 - 1 Mile
Lower

FED USGS **USGS40001043951**

Organization ID:	USGS-PR		
Organization Name:	USGS Puerto Rico Water Science Center		
Monitor Location:	PIEZOMETER CABO ROJO 7, CABO ROJO, PR		
Type:	Well	Description:	Not Reported
HUC:	21010003	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19920319	Well Depth:	40
Well Depth Units:	ft	Well Hole Depth:	40
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	11	Level reading date:	1993-04-28
Feet below surface:	23.7	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1993-03-25	Feet below surface:	21.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-02-23	Feet below surface:	19.8
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-01-27	Feet below surface:	20.7
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1992-12-10	Feet below surface:	16.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-10-14	Feet below surface:	13.2
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-09-18	Feet below surface:	14.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-08-26	Feet below surface:	20.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-07-16	Feet below surface:	22.3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-06-04	Feet below surface:	18.8
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-03-19	Feet below surface:	27.44
Feet to sea level:	Not Reported	Note:	Not Reported

13
ENE **FED USGS** **USGS40001043895**
1/2 - 1 Mile
Lower

Organization ID:	USGS-PR		
Organization Name:	USGS Puerto Rico Water Science Center		
Monitor Location:	CDLEO WELL, CABO ROJO, PR	Type:	Well
Description:	QW	HUC:	21010003
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	Not Reported	Well Hole Depth Units:	Not Reported

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14
NE **FED USGS** **USGS40001043902**
1/2 - 1 Mile
Lower

Organization ID:	USGS-PR		
Organization Name:	USGS Puerto Rico Water Science Center		
Monitor Location:	LOPEZ WELL, CABO ROJO, PR	Type:	Well
Description:	Not Reported	HUC:	21010003
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	140	Well Hole Depth Units:	ft

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

RADON

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

STREET AND ADDRESS INFORMATION

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RECORD OF DECISION

CABO ROJO CONTAMINATION SUPERFUND SITE

CABO ROJO, PUERTO RICO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2

May 2019

550119

Report Prepared on August 2023

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Cabo Rojo Groundwater Contamination Superfund Site
Cabo Rojo, Puerto Rico
PRN000206319

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) documents the selected remedy for the Cabo Rojo Groundwater Contamination Superfund Site, located in the Municipality of Cabo Rojo, Puerto Rico, which was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. §§ 9601-9675, as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300. This decision document explains the factual and legal basis for selecting the remedy for the Site. This decision is based on the Administrative Record file for the selection of this remedy. Refer to Appendix III of the Decision Summary for a copy of the Administrative Record Index for the selection of this remedy.

The Puerto Rico Environmental Quality Board (PREQB) concurs with the selected remedy. Refer to Appendix VI of the Decision Summary for a copy of the concurrence letter.

ASSESSMENT OF SITE

The United States Environmental Protection Agency (EPA), in consultation with PREQB, has determined that actual or threatened releases of hazardous substances at the Site, if not addressed, may present a current or potential threat to human health and the environment. Therefore, remediation is necessary. This determination is based on the conclusions set forth in the remedial investigation, the human health risk assessment, and the screening level ecological risk assessment.

DESCRIPTION OF THE SELECTED REMEDY

EPA, in consultation with PREQB, selects the remedy summarized in this document to address soil, vapor and groundwater contamination detected at the Site. The selected remedy, Alternative 2 (Soil Vapor Extraction (SVE)/Dual Phase Extraction (DPE), Monitored Natural Attenuation (MNA) of Groundwater, a Contingency of In-Situ Groundwater Treatment, and Institutional Controls), includes the following major components:

- SVE/DPE to the target soil remediation zones and underlying groundwater at the Cabo Rojo Professional Dry Cleaners (CRPDC) and Extasy Q Prints (EQP) source areas;
- Installation of vapor monitoring points to assess removal of vapor-phase contamination;
- MNA and long-term monitoring of Plume 2 and the portion of plume 1 outside of the source area;
- Institutional controls; and
- A contingency remedy of in-situ treatment of groundwater in Plume 1 (Alternative 3) if certain conditions are met (e.g., detection of NAPL, contaminant concentration increases in

key monitoring wells, detections in sentinel wells, detections in supply wells).

SVE/DPE Installation, Operation, and Maintenance at Source Areas - At CRPDC property, DPE wells will be installed to address the vadose zone within the target soil remediation zone to be defined based on PDI results. Groundwater extraction will be a component of DPE to remove groundwater contamination at shallow depths also within the target soil remediation zone. At the EQP property, SVE wells and groundwater extraction wells will be installed separately to address the vadose zone and the shallow groundwater contamination since the groundwater aquifer is a confined unit. Vapor monitoring points will be installed to track the progress of removing vapor-phase contamination. The existing building slab and pavements will be inspected, improved, and sealed if necessary and will serve as a cap for the DPE and SVE systems. The SVE/DPE remedy will also serve to mitigate potential vapor intrusion into the buildings at the CRPDC and EQP properties. Construction is estimated at 2 to 5 years, and operation and maintenance (O&M) of the SVE/DPE system is estimated to take approximately 5 years. The long-term groundwater monitoring period is assumed to be 30 years.

SVE/DPE Performance Evaluation at Source Areas – The effectiveness of SVE and/or DPE in the vadose zone soil will be evaluated by collecting soil gas samples. An evaluation will be conducted prior to shut down of the system when VOC concentrations in extracted vapor are reduced to an asymptotic level such that continued operation of the system is no longer effective or in-situ concentrations meet the soil remediation (RGs).

The effectiveness of SVE and/or DPE in minimizing soil contamination from serving as sources to groundwater contamination and soil vapor contamination will be evaluated in conjunction with groundwater and sub-slab vapor sample results. Plume 2 and the portion of Plume 1 outside the target remediation zone will be managed through the implementation of MNA and long-term monitoring. The RGs for soil and groundwater, along with the vapor intrusion screening levels will be used to determine the effectiveness of the SVE/DPE.

Sub-Slab and Indoor Air Monitoring - Sub-slab and indoor air samples at the CRPDC and EQP properties would be collected periodically to monitor the potential or presence of vapor intrusion. Results of vapor samples would be compared to the sub-slab and indoor air vapor intrusions Screening Levels (VISLs). Monitoring will help inform the progress and effectiveness of the active source remedy (SVE or DPE) and will be conducted until the vadose zone source areas are remediated to levels that eliminate the need to mitigate vapor intrusion at the point of exposure. Post-treatment vapor monitoring will be conducted to confirm the sources have been remediated and no longer contribute to vapor intrusion.

Potential contributions of contaminants of concern (COCs) from sources inside the buildings at the CCRPDC and EQP properties will be considered during the vapor intrusion monitoring, especially at the EQP facility where active business operations (printing) may utilize products containing VOCs.

Triggers for In-Situ Groundwater Treatment for Plume 1 - Additional groundwater treatment beyond that which will occur as part of DPE is not expected to be required. However, this remedy also includes in-situ groundwater remediation as a contingency remedy, as described in Alternative 3. As additional data from the PDI and groundwater monitoring become available, especially in the vicinities of the two source areas, considerations and/or conditions that may indicate the need to trigger the contingency remedy include the following:

- Detection of NAPL in the vadose zone soil or PCE/TCE concentrations indicative of NAPL (e.g., 1% solubility) at the water table, indicating a continuing source of groundwater contamination;
- Significant increase of contaminant concentrations in MW-15 and/or MW-3R/MW-3RS to greater than one order of magnitude above the any RG and/or an increasing trend of contaminant concentration in plume wells, such as Ana Maria, MW-2, and MW-1;
- Detections of PCE and/or TCE in sentinel wells, such as MW-16, USGS-OW-1 (for PCE or TCE), and PRASA-1; and
- Consistent detections of PCE and/or TCE in the supply wells.

Institutional Controls - While groundwater contamination is still present, institutional controls will be implemented to help control and limit exposure to hazardous substances in the groundwater at the Site. The types of institutional controls which will be relied upon for the groundwater at the Site are: 1) existing local laws that limit installation of drinking water wells without a permit; 2) informational devices will be used to prevent well installation and prohibit occupancy, use, or new construction in the source areas unless appropriate vapor-intrusion investigations are conducted and/or mitigation measures (including periodic monitoring, as necessary) are implemented; and 3) advisories published in newspapers, periodic letters sent to local government authorities informing them of the need to prevent well installation, and inspection of local and/or Commonwealth health department records to insure that no wells are installed that could impact the groundwater plume or result in exposure to contaminated groundwater.

Green Remediation - The environmental benefits of the selected remedy may be enhanced by employing design technologies and practices that are sustainable in accordance with the EPA Region 2's Clean and Green Energy Policy.[1]

DECLARATION OF STATUTORY DETERMINATIONS

Statutory Requirements

The selected remedy meets the requirements for remedial actions set forth in Section 121 of CERCLA, 42 U.S.C. § 9621, because it meets the following requirements: 1) it is protective of human health and the environment; 2) it meets a level of standard of control of the hazardous substances, pollutants, and contaminants which at least attains the legally applicable or relevant and appropriate requirements under the federal and commonwealth laws unless a statutory waiver is justified; 3) it is cost-effective; and 4) it utilizes permanent solutions and alternative treatment or resource recovery technologies to the maximum extent practicable.

In addition, Section 121 of CERCLA, 42 U.S.C. § 9621, includes a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous substances as a principal element. The selected remedy satisfies the preference for treatment, as it will result in the treatment of contaminated soil, vapors, and groundwater.

Five-Year Review Requirements

This remedy will not result in hazardous substances, pollutants, or contaminants remaining at the Cabo Rojo Groundwater Contamination Superfund Site above levels that would allow for unlimited use and unrestricted exposure. However, because it may take more than five years to attain the remediation goals, pursuant to Section 121(c) of CERCLA, policy reviews will be conducted no less often than once every five years after the completion of construction to ensure that the remedy is, or will be,

1 https://www.epa.gov/greenercleanups/epa-region-2-clean-and-green-policy

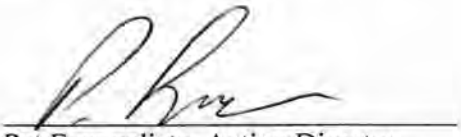
protective of human health and environment.

ROD DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record file located in the information repository.

- Contaminants of concern and their respective concentrations may be found in the "Site Characteristics" section.
- Potential adverse effects associated with exposure to Site contaminants may be found in the "Summary of Site Risks" section.
- A discussion of cleanup levels for chemicals of concern may be found in the "Remedial Action Objectives" section.
- A discussion of principal threat waste is contained in the "Principal Threat Waste" section.
- Current and reasonably-anticipated future land and groundwater use assumptions are discussed in the "Current and Potential Future Land and Groundwater Uses" section.
- Estimated capital, annual operation and maintenance (O&M), and total present worth costs are discussed in the "Description of Alternatives" section.
- Key factors that led to selecting the remedy (*i.e.*, how the selected remedy provides the best balance of tradeoffs with respect to the NCP criteria, highlighting those criteria which are key to the decisions) may be found in the "Evaluation of Remedial Alternatives" and "Statutory Determinations" sections.

AUTHORIZING SIGNATURE



Pat Evangelista, Acting Director
Superfund and Emergency Management Division
EPA - Region 2

5/9/19
Date

DECISION SUMMARY

CABO ROJO GROUNDWATER CONTAMINATION SITE
CABO ROJO, PUERTO RICO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2

May 2019

Report Prepared on August 2023

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SITE NAME, LOCATION, AND DESCRIPTION

The Cabo Rojo Groundwater Contamination Superfund Site (the Site) is located in the Bajura ward in the municipality of Cabo Rojo in southwestern Puerto Rico and includes three source areas with two separate groundwater plumes. The first source area is in and around the Cabo Rojo Professional Dry Cleaners (CRPDC) located in the northern area of Cabo Rojo. CRPDC is no longer operating. Located approximately 700 feet northeast of CRPDC is another source area, Extasy Q Prints (EQP), which is an active print shop (Figure 1, Appendix I). Approximately 0.7 miles southwest of both CRPDC and EQP is the third source area, Puerto Rico Industrial Development Company (PRIDCO) East, a complex of 10 separate, mostly vacant buildings with a long history of industrial and commercial operations.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

Routine groundwater sampling from the Cabo Rojo Urbano public water supply system, north of the source areas, from 2002 through 2011 revealed chlorinated volatile organic compounds (VOCs), tetrachloroethene (PCE) and trichloroethene (TCE), in several of the wells below federal maximum contaminant levels (MCLs). This sparked preliminary investigations by the U.S. Environmental Protection Agency (EPA) at potential source areas (PSAs) throughout Cabo Rojo from 2006 to 2012. Soil, groundwater, and soil vapor sampling at several facilities revealed detections of chlorinated VOCs above MCLs. Based on the data collected, a hazard ranking system package was prepared and the Site was added to the National Priorities List (NPL) on March 10, 2011.

Enforcement

EPA's search for potentially responsible parties (PRPs) is ongoing. EPA has issued notice letters to EQP and PRIDCO identifying them as PRPs for the Site under Section 107 of CERCLA, 42 U.S.C. § 9607.

EPA REMEDIAL INVESTIGATION/FEASIBILITY STUDY

In October 2013, EPA commenced a fund-lead Remedial Investigation (RI) at the Site. The overall purpose of the RI was to evaluate the nature and extent of the groundwater, soil, surface water, and sediment contamination at the Site. This was assessed during the RI by collecting and analyzing surface and subsurface soil, soil gas, surface water, sediments, and groundwater samples, and then comparing analytical results to federal, commonwealth, and Site-specific screening criteria. Screening criteria are values used in the RI to conservatively screen potential areas of contamination.

An RI Report was prepared by EPA to document the nature and extent of the contamination at the Site. As part of the RI, EPA also prepared a Baseline Human Health Risk Assessment (HHRA) Report to document the current and future effects of Site contaminants on human health associated with the contamination found at the Site. EPA also conducted a Screening-level Ecological Risk Assessment (SLERA) to evaluate any potential for ecological risks from the presence of Site contaminants in surface water and sediment. A description of the HHRA and SLERA for this Site is provided in the Summary of Risk Section of this Record of Decision (ROD).

A Feasibility Study (FS) was prepared to present and analyze cleanup alternatives suitable for

the Site. The purpose of the FS was to identify, develop, screen, and evaluate a range of remedial alternatives that protect human health and the environment from potential risks and enable EPA to select a remedy for the Site. A description of the cleanup alternatives evaluated for this Site is provided in the Description of Alternatives Section of this ROD.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the RI, a community involvement plan (CIP) was developed to assess any community concerns about the Site and encourage public participation. As part of the CIP and as required by Superfund regulations, EPA prepared a Proposed Plan for the clean-up of the Site. A Proposed Plan summarizes the remedial alternatives considered in the FS and identifies EPA's preferred alternative and the rationale for the preferred remedy. On August 2, 2018, EPA made the Proposed Plan, the RI Report, the HHRA and SLERA Reports, and the FS Report for the Site available to the public. All of these documents, along with others, are included in the Administrative Record for the selection of this remedy, which has been made available to the public at the following locations: EPA's Docket Room in New York, New York; the Blanca E. Colberg Public Library, Cabo Rojo, Puerto Rico; the Puerto Rico Environmental Quality Board (PREQB) Superfund File Room in San Juan, Puerto Rico; and EPA's Caribbean Environmental Protection Division Office in Guaynabo, Puerto Rico. A copy of the Administrative Record Index for the Site remedy is provided in Appendix III of this ROD.

Notices of the availability (Appendix IV) of the Proposed Plan (Appendix V) and supporting documentation was published in the "Primera Hora" newspaper on August 2, 2018 and September 12, 2018. A public comment period was held from August 2, 2018 through October 5, 2018. In addition, a public meeting was held on August 9, 2018, at the Blanca E. Colberg Public Library Conference Auditorium, Cabo Rojo, Puerto Rico. The purpose of the public meeting was to present the Proposed Plan to the community and provide an opportunity for the public to ask questions or give comments on the proposed remedial alternatives described in the Proposed Plan and EPA's preferred alternative. At this meeting, representatives from EPA and PREQB were present to answer questions and receive comments about the remedial alternatives for the Site and the proposed clean-up plan for the Site. A copy of the attendance sheet for this meeting can be found in Appendix VII of this ROD. Appendix VIII of this ROD contains the official transcript of the public meeting. In addition, EPA's response to written comments received during the public comment period is included in the Responsiveness Summary (Appendix IX), which is part of this ROD.

SCOPE AND ROLE OF RESPONSE ACTION

EPA is addressing the cleanup of this Site by implementing a comprehensive remedial action to address the soil, vapor, and groundwater contamination at the Site.

SITE CHARACTERISTICS

CONTAMINATION OVERVIEW

The RI identified PCE, TCE, cis-1,2-dichloroethene (cis-1,2-DCE), vinyl chloride, and 1,1-dichloroethene (1,1-DCE) as Site-related chemicals. The fate of a chemical in the environment is a function of its physical and chemical properties and conditions at the Site. The potential

for environmental transport is a function of the conditions at a site, including geological and hydrogeological characteristics. The primary fate and transport aspects of the Site are summarized below.

- Elevated concentrations of PCE were found at CRPDC and EQP in soils, likely from PCE releases to the ground as raw or waste product. The elevated concentration of cis-1,2-DCE at EQP is potentially a result of degradation of PCE or TCE. These contaminants in the vadose zone migrated through leaching into groundwater, volatilization, and degradation.
- PCE and TCE in soil and groundwater migrate via volatilization as vapor, as confirmed by the sub-slab results at the CRPDC and EQP buildings.
- Dissolved chlorinated VOCs in Plume 1 (PCE, TCE, cis-1,2-DCE, and vinyl chloride) and Plume 2 (1,1-DCE) migrate in groundwater primarily by advection (groundwater movement/flow), dispersion, diffusion, dilution, retardation (primarily via adsorption), volatilization, and degradation.
- Dilution and dispersion are significant attenuation processes in the alluvium, saprolite, and highly fractured bedrock.

TOPOGRAPHY AND DRAINAGE

The Site is within the Río Guanajibo alluvial valley. Surface drainage from the Site may either flow north-northeast into the Ciénaga de Cuevas swamp and eventually to the Río Guanajibo (located approximately 2 miles northeast of the Site) or recharge the bedrock aquifer.

GEOLOGY AND HYDROGEOLOGY

The soil at the Site generally consists of an unconsolidated overburden unit consisting of silty clay underlain by a saprolite zone composed of hard sandy to silty clay with angular rock fragments transitioning to a sand/gravel matrix with cobble sized rock fragments. Below the saprolite is the Sabana Grande formation, which consists of a shallow highly fractured, transmissive bedrock zone underlain by a low-transmissivity bedrock zone. A localized zone of alluvium replaces the shallow overburden unit around the CRPDC source area (dark brown clay, fine and medium sand, and brown silt and sand).

Within the unconsolidated zone (alluvium, overburden, and saprolite), the alluvium, where present, provides a preferential flow path for groundwater contamination to move from the unconsolidated deposits into the underlying bedrock. Little groundwater was encountered in the overburden silty clay unit, which, where present, acts as a semi-confining unit overlying the saprolite. The saprolite is a significant water-bearing unit that stores water and provides recharge to the underlying bedrock aquifer. The lateral direction of groundwater flow in the overburden is predominantly to the north in the Plume 1 area and to the north-northeast in the Plume 2 area.

Groundwater in the bedrock unit is confined, or semi-confined, based on observations during drilling and subsequent water level observations. Overall, the fractured bedrock is very transmissive with a higher hydraulic conductivity compared to the saprolite and alluvium, especially in the shallow bedrock. Site-wide groundwater flow in bedrock is to the north and in Plume 1 it was previously influenced by pumping in the former Ana Maria public supply well. In the northern portion of the Site, the flow is directed to the northeast due to a

combination of natural groundwater discharge toward the Bajura area and the long-term pumping influence of active public supply wells farther downgradient (Figure 2). There is an upward vertical gradient from the deepest monitoring zones in the deep bedrock toward the higher transmissivity shallow zone. The vertical gradient is larger in the northern Site area, than in the southern Site area because it is closer to natural groundwater discharge in the Bajura area, and the water supply wells are completed in the limestone.

CULTURAL RESOURCES

In August 2013, a Stage 1A level Cultural Resources Survey was completed by Richard Grubb & Associates, Inc. under subcontract to CDM Smith (Appendix F of the RI [CDM Smith 2018c]). The Stage 1A survey included a comprehensive documentary research and Site visit designed to identify known or potential historical, architectural, and/or archeological resources within the area of potential effects (APE), a 450-acre area including all the locations investigated during the RI. Portions of the APE possess high and moderate sensitivity for archaeological resources. Six previously documented archaeological sites were reported within or adjacent to portions of the APE. These sites and zones of sensitivity for archaeological resources have been delineated based on cartographic evidence and field reconnaissance. Within the southwestern, northeastern, and central portions of the APE, zones of high and moderate sensitivity for archaeological resources have been delineated. Other portions of the APE possess extensive evidence of disturbance associated with previous earthmoving activities and are assessed as having low sensitivity for the survival of intact archaeological resources. Parking lots and yard areas within the low sensitivity zone, however, may possess potential for deep archaeological features, such as wells or privies associated with historic structures.

If proposed subsurface disturbance for remediation is planned within zones of high or moderate archaeological sensitivity, a Stage 1B archaeological survey is recommended within those areas of direct impact. If proposed subsurface disturbance will occur in registered archeological sites or in the downtown urban area, a close consideration of the location of proposed impacts is also recommended to determine whether small paved or open areas may possess potential for associated archaeological deposits or deep archaeological features. A close examination of the proposed impacts along the Quebrada Mendoza and other waterways in the APE is recommended to identify whether impacts will occur within deeply buried alluvial deposits possessing archaeological potential. Due to the low likelihood of the survival of intact archaeological and the fact that there will be little subsurface disturbance in the remediation areas, no additional archaeological survey is recommended for any planned remediation within this zone of the APE.

SOURCES OF CONTAMINATION

Two groundwater contamination plumes were identified at the Site: one plume in the northern area of Cabo Rojo (Plume 1) near CRPDC and EQP, and one plume in the southern area of Cabo Rojo (Plume 2) downgradient of PRIDCO East (Figure 3).

Plume 1 Sources

- CRPDC – This property used PCE in its dry-cleaning operations and produced PCE sludge as a waste product. PCE concentrations in soil ranged from 22J to 3,700 µg/kg. Elevated PCE concentrations in soil are consistent with areas formerly used to store PCE wastes and unused PCE. Although the CRPDC facility is no longer operating,

vapor samples exhibited PCE and TCE at CRPDC, indicating these contaminants remain in soil in the vadose zone and provide a continuing source of contaminants to the groundwater and indoor air through migration as subsurface vapor.

- EQP – This property used solvent-based cleaning fluids containing PCE to clean screens used in the printing process. PCE and cis-1,2-DCE concentrations in soil samples exceeded their respective soil screening criteria. Vapor samples also exhibited PCE, TCE, and cis-1,2-DCE. Although the contaminant concentrations in soil at EQP are generally lower than those at CRPDC, PCE, TCE, and cis-1,2-DCE in soils at EQP provide a continuing source of contaminants to the groundwater and indoor air through migration as subsurface vapor.

Plume 2 Sources

PRIDCO East – Previous site uses include businesses that may have used 1,1-DCE and other VOCs during their operations. Soil vapor sampling in 2011 revealed detections of DCE in the northern portion of the property.

In 2013, soil sampling revealed detections of DCE in the northern portion of the property as well. Additionally, in May 2013, 1,1-DCE was found in groundwater screening samples, but at concentrations below the standard of 7 ug/L (max concentration was 2.6 ug/L). The presence of 1,1-DCE in soil, groundwater, and vapor suggests that a historic source of 1,1-DCE was present at the property.

Based on previous property uses and soil vapor concentrations, PRIDCO East is considered to be a source of the 1,1-DCE groundwater plume seen in MPW-9R and MW-19R located downgradient of PRIDCO East. 1,1-DCE was not detected in the shallow or deep background wells upgradient of PRIDCO East.

SUMMARY OF SOIL CONTAMINATION

Soil delineation samples were collected from five PSAs for laboratory analysis and validation. The soil analytical results revealed elevated concentrations of PCE and cis-1,2-DCE at EQP and PCE at CRPDC (Figures 4 and 5). The other three PSAs (D'Elegant Fantastic Dry Cleaners, Serrano II Dry Cleaners, PRIDCO East) exhibited either low detections or no detections of VOCs in the soil delineation samples. The soil analytical results and known prior uses established EQP and CRPDC as source areas.

As discussed above, additional RI soil and groundwater sampling was conducted in 2017 at PRIDCO East. These and prior results helped identify PRIDCO East as a source area.

SUMMARY OF GROUNDWATER CONTAMINATION

Two distinct areas of groundwater contamination have been identified. Plume 1, the groundwater plume to the north, encompasses the CRPDC and EQP source areas and the Ana Maria former supply well. At CRPDC, PCE, TCE, cis-1,2-DCE, and vinyl chloride are present in the shallow alluvium (MW-4) and in the upper bedrock aquifer (MW-4R), where the alluvium well is situated about 30 ft. above the bedrock well screen. Both wells are hydraulically upgradient of the Ana Maria well. The highest concentrations of PCE (530 ug/L), TCE (140 ug/L), cis-1,2-DCE (410 ug/L), and vinyl chloride (65 ug/L) occurred in an alluvial well (MW-4) at CRPDC during Round 1 (February 2014). Data collected in May 2017 (Round

2) showed an order of magnitude decrease of PCE (27 ug/L), TCE (10 ug/l), cis-1,2-DCE (44 ug/L), and vinyl chloride (1.2 ug/L) in this alluvial well. While VOC concentrations were lower in Round 2, they remain above screening criteria, with the exception of cis-1,2-DCE. The EQP facility is also a source area contributing to Plume 1. PCE, TCE, and cis-1,2-DCE were detected in soil and groundwater at EQP at lower concentrations than at CRPDC. VOCs in the unconsolidated zone of Plume 1 extend to the Ana Maria well area, but do not extend into the Bajura area. Historical pumping at the Ana Maria well likely drew contaminated groundwater from EQP and CRPDC toward the well. The Ana Maria well has been sampled by PRASA and EPA since 2002. From 2002 to 2017, PCE and TCE concentrations detected in the Ana Maria well range from non-detect to a maximum PCE concentration of 4.0 ug/L in 2002, below the EPA MCL of 5 ug/L.

In general, Plume 1 is primarily in the alluvium, the lower portion of the overburden/saprolite zone, and the upper portion of the bedrock zone. Concentrations of Site-related contaminants generally decreased in samples taken from the CRPDC wells during Round 1 to Round 2, due to a combination of natural attenuation and lack of ongoing releases from CRPDC. The one exception is Pozo Escuela, a former supply well for a school converted to a multi-port bedrock monitoring well, which showed a slight increase of PCE from Round 1 (1.3 ug/L) to Round 2 (5.1 ug/L) A third round of post-Maria hurricane data were collected in 2018 and concentrations were relatively consistent with some slight increases, most notably in MW-4. This suggests that large storm events most likely lead to the release of residual contamination into groundwater due to the continued presence of the source in the vadose zone and shallow groundwater at CRPDC and EQP.

Plume 2, the groundwater plume in the south, consists of a 1,1-DCE plume near PRIDCO East. A series of 3 shallow groundwater transects were collected (a total of 19 locations) across the PRIDCO East property. These samples were collected in the saprolite zone and exhibited concentrations of 1,4-dioxane and 1,1-DCE at concentrations up to 12 ug/L and 1.3 ug/L, respectively; these concentrations are below their respective cleanup criteria. The presence of these constituents in the saprolite groundwater at the PRIDCO East property suggests a historical source of groundwater contamination that can be linked to downgradient bedrock detections of 1,4-dioxane and 1,1-DCE through fractures in bedrock, allowing contamination to migrate through preferential pathways. The contaminants were detected in bedrock wells downgradient of PRIDCO East at concentrations up to 58 ug/L for 1,1-DCE (MW-18R, Round 1) and up to 9.3 ug/L for 1,4-dioxane (MPW-9R, Round 2). However, 1,4-dioxane concentrations observed at the Site did not yield any risk or hazard above EPA's thresholds for protection of human health or the environment. Therefore, Plume 2 is regarded mainly as a 1,1-DCE plume. Round 2 data show an overall decrease in 1,1-DCE concentrations. 1,1-DCE was non-detect in MW-18R and a reduction of 1,1-DCE between Rounds 1 and 2 was observed in MPW-9R for all four bedrock ports. The maximum concentration of 1,1-DCE during Round 2 was found in the new bedrock monitoring well, MW-19R. This well had a concentration of 34 ug/L (Figure 3). The third round of data collected after Hurricane Maria in Plume 2 monitoring wells was generally consistent with Round 2 data.

SUMMARY OF SURFACE WATER/SEDIMENT CONTAMINATION

No Site related contaminants were detected in surface water or sediment samples collected from drainage features near the PSAs.

SUMMARY OF VAPOR INTRUSION ANALYTICAL RESULTS

Sub-slab and indoor air samples were collected at 29 structures potentially impacted by vapors from soil and/or groundwater contamination. Results were compared to EPA residential and commercial vapor intrusion screening levels (VISLs) for indoor air and sub-slab vapor. Sub-slab vapor results revealed the highest concentrations of Site-related compounds, primarily PCE and TCE, at CRPDC and EQP. Indoor air samples had fewer occurrences of these compounds and at much lower concentrations. At CRPDC, there were two detections of PCE in indoor air, but neither sample exceeded either the residential or commercial VISLs. Nevertheless, the detections of PCE in both sub-slab and indoor air illustrate completed vapor intrusion pathways. At EQP, contaminants detected in sub-slab (exceeding both residential and commercial VISLs) were also detected in indoor air at concentrations exceeding the indoor air residential VISLs (but not the commercial VISLs). This also demonstrates completed vapor intrusion pathways at EQP. Other properties with high concentrations of Site-related contaminants in sub-slab vapors did not have correspondingly high indoor air concentrations (indicating incomplete vapor intrusion pathways). Other properties with high concentrations of Site-related contaminants in indoor air did not have correspondingly high sub-slab vapor concentrations (indicating potential indoor background source contamination interference). See Table 1 and 2, Appendix II.

CONCEPTUAL SITE MODEL

The Conceptual Site Model (CSM) is developed to integrate all the different types of information collected during the RI, including the physical setting, the nature and extent of contamination, and the contaminant fate and transport.

Plume 1 Conceptual Site Model

Two source areas that used PCE in their operations, CRPDC and EQP, overlie Plume 1. At both CRPDC and EQP, raw material and waste containing PCE was discharged to the ground. Contamination entered the subsurface dissolved in discharged waste and/or dissolved in rainwater. Once in the subsurface, contamination would be in either a vapor phase (as indicated by the sub-slab vapor sampling results), sorbed to soil (as suggested by the high soil distribution coefficient for PCE in the alluvium and overburden), or in a dissolved phase, moving from the vadose zone into the saturated zone (as indicated by the presence of groundwater contamination).

While groundwater concentrations in Plume 1 were no more than one order of magnitude above criteria (*i.e.*, relatively low), the presence of contaminant mass in both the vadose zone and groundwater indicates that CRPDC and EQP are continuing sources of groundwater contamination.

Once in the aquifer, contaminant migration is currently driven primarily by advection. In the past, pumping in the Ana Maria public supply well (now closed) likely enhanced the migration of contaminated groundwater from the EQP and CRPDC source areas toward the Ana Maria well. Without pumping, there is still a component of groundwater flow from the vicinity of wells at EQP toward the Ana Maria well (northwesterly). Natural groundwater flow at the CRPDC source area is still toward the Ana Maria well (northerly).

Contaminant migration varies in different hydrostratigraphic units. Migration in the

overburden is expected to be slow. Migration is expected to increase as contaminants migrate downward from the overburden into the more permeable underlying units under the influence of rainwater infiltration and local downward groundwater gradients. Migration in the alluvium is likely faster than in the overburden and may be acting as a localized preferential pathway near MW-4/4R and MW-15. In the saprolite and highly fractured bedrock, dilution and dispersion are expected to actively reduce concentrations as groundwater moves downgradient. However, the continuing discharge of mass from the shallow silty clay into these zones likely replenishes at least a portion of the mass in these units, sustaining concentrations above criteria. It should be noted that concentrations in the saturated alluvium (MW-4) decreased by an order of magnitude between Round 1 and Round 2, likely due to a combination of natural attenuation mechanisms and ceased operations at CRPDC. Concentrations in the Ana Maria well have been below screening criteria for the past 15 years and fluctuate between non-detect and trace concentrations of chlorinated VOCs in recent RI sampling rounds. Contaminant concentrations also increased in well MW-4 at CRPDC in the Post-Maria sampling event, indicating that while the plume is not significantly impacting the Ana Maria well, the residual source area (*i.e.* CRPDC) continues to feed the groundwater contamination.

Plume 2 Conceptual Site Model

The Plume 2 source area is the PRIDCO East property. Previous property uses include businesses that may have used 1,1-DCE and other VOCs in their operations, suggesting a source was present at the property in the past. Soil vapor sampling in 2011 and soil screening sampling in 2013 revealed detections of DCE in the northern portion of the property. The presence of 1,1-DCE in soil, groundwater screening samples, and soil vapor is evidence of a past source at the property. Similarly, 1,4-dioxane likely also migrated to groundwater from PRIDCO East operations; however, the concentrations observed were not determined to yield significant risks. Therefore, Plume 2 is discussed only in terms of 1,1-DCE.

Waste material containing 1,1-DCE from operations at PRIDCO East likely was discharged to the ground in the past. Contamination entered the subsurface dissolved in discharged waste and/or dissolved in rainwater. Once in the subsurface, contamination would have entered a vapor phase, sorbed to soil, or entered the dissolved phase. Once in the saprolite, highly fractured bedrock, and bedrock fractures, contaminant migration is driven primarily by advection in groundwater within the highly transmissive upper bedrock and underlying deep bedrock zones.

In the saprolite and highly fractured bedrock, dilution and dispersion are expected to actively reduce concentrations moving downgradient. The highest concentrations in Plume 2 were found in the fractures in the deeper competent bedrock. Ambient groundwater flow is relatively slow in these fractures; hence, contamination is expected to migrate more slowly with less dilution and dispersion compared to shallow bedrock. Limited evidence was found for sustained destructive natural attenuation of 1,1-DCE in Plume 2. Trace detections of vinyl chloride in MPW-9R, MW-18R, and MW-19R in Round 2 suggest possible localized reductive dechlorination of 1,1-DCE under methanogenic conditions (biological degradation under reducing conditions). Concentration reductions in Plume 2, however, are still more likely dominated by dilution and dispersion.

EVALUATION OF NATURAL ATTENUATION

"Natural attenuation" refers to naturally occurring attenuation processes that may already be present in an aquifer to decrease contaminant concentrations. It can be considered as a remedial component if it can be expected to achieve Site-specific remediation goals within a reasonable time frame when compared to other remedial measures. Natural attenuation processes that reduce chlorinated-VOC contaminant concentrations in groundwater include destructive (*e.g.*, biodegradation, abiotic degradation, and chemical reactions with other subsurface constituents) and nondestructive mechanisms (*e.g.*, volatilization, dissolution, dilution/dispersion, and adsorption/desorption).

Biodegradation is frequently a significant destructive attenuation mechanism. Chlorinated solvents, such as PCE and TCE, attenuate predominantly by reductive dechlorination under anaerobic conditions.

During the RI investigation, MNA indicator parameters of biotic and abiotic degradation were collected from monitoring wells to evaluate whether subsurface conditions are conducive to *in-situ* natural degradation of chlorinated VOCs. MNA parameters included the following:

> Field parameters: pH, specific conductivity, dissolved oxygen (DO), temperature, ferrous iron and Oxidation reduction potential (ORP) as Eh Laboratory analysis: nitrate/nitrite, sulfate, sulfide, alkalinity, chloride, total organic content (TOC), methane, ethane, ethene, acetylene, and propane.

The MNA data were collected for Rounds 1 and 2 and used to evaluate which MNA mechanisms are occurring in Plumes 1 and 2. Plume 1 was found to show some evidence that natural attenuation has been occurring. While there is limited evidence of ongoing anaerobic biodegradation occurring in the plumes (*e.g.,* low organic carbon levels, lack of electronic receptors), the presence of degradation products (showing degradation to vinyl chloride) in Plume 1 is suggestive that they were generated during the early life of the plume, potentially in the vadose zone or shallow groundwater in and around the release point. The elevated chloride found in Plume 1 monitoring wells is indicative of the dechlorination of PCE. The redox conditions were variable between Rounds 1 and Round 2, indicating reducing conditions may be temporally variable in the aquifer. Additionally, the pH and temperature ranges were shown to be optimal for the growth of bacteria, further supporting a potential for biodegradation.

The order of magnitude decreases in concentrations of PCE and its three daughter products between Round 1 and Round 2 in MW-4 are indicative of a pattern of reduced discharge from the vadose zone to the saturated zone or dilution/dispersion. Additionally, the 2002 peak in PCE concentrations in the Ana Maria well has shown an overall reduction in VOC concentrations and most recently non-detect levels in 2017 providing further evidence of an overall decrease in concentrations in Plume 1 groundwater.

Plume 2 primarily consists of 1,1-DCE with a maximum concentration of 34 ug/L. While organic carbon levels are higher in Plume 2 compared to Plume 1, suggesting a higher potential for biodegradation activity, the levels were still rather low. However, the pH and temperature ranges are supportive for bacterial growth and dissolved oxygen levels range, similar to Plume 1, suggesting certain temporal conditions may be more supportive of biodegradation. Trace

concentrations of vinyl chloride in Round 2 suggest localized reduced dechlorination of 1,1-DCE under methanogenic conditions.

Lastly, given the high transmissivity in the upper fractured bedrock, and even the shallow groundwater in both the saprolite and alluvium, the MNA mechanisms of dilution and dispersion will have considerable influence in this aquifer for both Plumes 1 and 2.

CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

The Cabo Rojo municipality is 72 square miles in size, with a population of 50,917; the Bajura ward has a population of 2,423 (U.S. Census 2010). The primary land uses near the Site are agricultural, residential, and commercial development. The areas immediately surrounding the sources areas are highly developed and urban in nature and are expected to remain so in the future.

SUMMARY OF SITE RISKS

As part of the RI/FS, EPA conducted a baseline risk assessment to estimate the current and future effects of contaminants on human health and the environment. A baseline risk assessment is an analysis of the potential adverse human health and ecological effects of releases of hazardous substances from a site in the absence of any actions or controls to mitigate such releases, under current and future land uses. The baseline risk assessment includes a HHRA and a SLERA. It provides the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by the remedial action. This section of the ROD summarizes the results of the baseline risk assessment for the Site.

HUMAN HEALTH RISK ASSESSMENT

A four-step process is utilized for assessing site-related human health risks for a reasonable maximum exposure scenario:

- Hazard Identification – uses the analytical data collected to identify the contaminants of potential concern (COPC) at the Site for each medium, with consideration of a number of factors explained below;
- Exposure Assessment - estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways (*e.g.,* ingesting contaminated well-water) by which humans are potentially exposed;
- Toxicity Assessment - determines the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure (dose) and severity of adverse effects (response); and
- Risk Characterization - summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site-related risks. The risk characterization also identifies contamination with concentrations which exceed acceptable levels, defined by the National Contingency Plan (NCP) as an excess lifetime cancer risk greater than $1 \times 10^{-6} – 1 \times 10^{-4}$ or a Hazard Index (HI) greater than 1; contaminants at these concentrations are considered chemicals of concern (COCs) and are typically those that will require remediation at the Site. Also included in this section is a discussion of the uncertainties associated with these risks.

Hazard Identification

In this step, COPCs in each medium are identified based on such factors as toxicity, frequency of occurrence, fate and transport of the contaminants in the environment, concentrations, mobility, persistence and bioaccumulation. The HHRA began with selecting COPCs in soil, groundwater, surface water, and sediment at the Site that could potentially cause adverse health effects in exposed populations. COPCs are selected by comparing the maximum detected concentrations of each chemical identified with Commonwealth and federal risk-based screening values. While potential exposures to soil, sediment and surface water were considered, the chemical concentrations detected in these media were below the applicable screening values. As a result, direct exposure to these media are not expected to result in elevated cancer risk or noncancer health hazard. Therefore, COPCs were only selected for groundwater. This was the only media quantitatively evaluated in the HHRA, although the risks associated with the vapor intrusion pathway were evaluated qualitatively as well.

The Site-related COCs exceeding risk and hazard thresholds include PCE, TCE, cis-1,2-DCE, and vinyl chloride. Although unassociated with elevated risk, 1,1-DCE was also identified in groundwater at concentrations exceeding the Puerto Rico Water Quality Standard and Federal MCL (7 ug/L). Therefore, this chemical is considered a COC as well. A comprehensive list of all COPCs identified in the risk assessment (entitled "Final Human Health Risk Assessment Cabo Rojo Groundwater Contamination Site" dated April 2018), is available in the administrative record for the Site. Only chemicals exceeding risk and hazard thresholds are included in Table 3 of Appendix II.

Exposure Assessment

Consistent with Superfund policy and guidance, the HHRA assumes no remediation or institutional controls to mitigate or remove hazardous substance releases. Cancer risks and noncancer hazard indices were calculated based on an estimate of the reasonable maximum exposure (RME) expected to occur under current and future conditions at the Site. The RME is defined as the highest exposure that is reasonably expected to occur at a site.

As previously stated, two separate plumes of groundwater contamination were identified at the Site. The HHRA evaluated potential risks to populations associated with both current and potential future land uses for each plume as two distinct exposure areas. The groundwater plumes are located in mixed residential and commercial areas and future land use is expected to remain the same. Although potable water is currently provided by a treated public water supply, the HHRA assumed groundwater from each plume could be used as a source of drinking water in the future. Exposure pathways were identified for each potentially exposed population and each potential exposure scenario for groundwater and indoor air via vapor intrusion. Based on the current and anticipated future land uses described above, the following exposure populations and pathways were evaluated under the current and future land use scenarios:

- Site Worker (adult): Ingestion of groundwater used as tap water (future) and inhalation of indoor air via vapor intrusion (current and future).

- Resident (child and adult): Ingestion, dermal contact, and inhalation of groundwater chemical contaminants while showering/bathing (future), and inhalation of indoor air

via vapor intrusion (current and future).

A summary of the exposure pathways included in the HRRA can be found in Appendix II, Table 4. Typically, exposures are evaluated using a statistical estimate of the exposure point concentration, which is usually an upper bound estimate of the average concentration for each contaminant, but in some cases may be the maximum detected concentration. A summary of the exposure point concentrations for the COCs in groundwater can be found in Appendix II, Table 3. Contaminant information relevant to the vapor intrusion pathway is displayed in Table 9 of Appendix II and discussed in the following subsections. A comprehensive list of exposure point concentrations for all COPCs can be found in Appendix B (Table 3 series) of the HHRA.

Toxicity Assessment

In this step, the types of adverse health effects associated with contaminant exposures and the relationship between magnitude of exposure and severity of adverse health effects were determined. Potential health effects are contaminant-specific and may include the risk of developing cancer over a lifetime or other noncancer health effects, such as changes in the normal functions of organs within the body (*e.g.*, changes in the effectiveness of the immune system). Some contaminants can cause both cancer and noncancer health effects.

Under current EPA guidelines, the likelihood of carcinogenic risks and noncarcinogenic hazards due to exposure to site chemicals are considered separately. Consistent with current EPA policy, it was assumed that the toxic effects of the Site-related chemicals would be additive. Thus, cancer and noncancer risks associated with exposures to individual COPCs were summed to indicate the potential risks and hazards associated with mixtures of potential carcinogens and noncarcinogens, respectively.

Toxicity data for the human health risk assessment were provided by the Integrated Risk Information System (IRIS) database, the Provisional Peer Reviewed Toxicity Database (PPRTV), or another source that is identified as an appropriate reference for toxicity values consistent with EPA guidance. This information is presented in Table 5 (Non-Carcinogenic Toxicity Data Summary) and Table 6 (Cancer Toxicity Data Summary) of Appendix II. Additional toxicity information for all COPCs is presented in the HHRA.

Risk Characterization

This step summarized and combined outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks. Exposures were evaluated based on the potential risk of developing cancer and the potential for noncancer health hazards.

Noncarcinogenic risks were assessed using a hazard index approach, based on a comparison of expected contaminant intakes and benchmark comparison levels of intake (reference doses, reference concentrations). Reference doses (RfDs) and reference concentrations (RfCs) are estimates of daily exposure levels for humans (including sensitive individuals) which are thought to be safe over a lifetime of exposure. The key concept for a noncancer HI is that a "threshold level" (measured as an HI of less than 1) exists at which noncancer health effects are not expected to occur. The estimated intake of chemicals identified in environmental media (*e.g.,* the amount of a chemical ingested from contaminated drinking water) is compared to the RfD or the RfC to derive the hazard quotient (HQ) for the contaminant in the particular medium. The HI is obtained by adding the HQs for all compounds within a particular medium

that impacts a particular receptor population.

The HQ for oral and dermal exposures is calculated as below. The HQ for inhalation exposures is calculated using a similar model that incorporates the RfC, rather than the RfD.

HQ = Intake/RfD

Where: HQ = hazard quotient
Intake = estimated intake for a chemical (mg/kg-day)
RfD = reference dose (mg/kg-day)

The intake and the RfD will represent the same exposure period (*i.e.*, chronic, subchronic, or acute).

As previously stated, the HI is calculated by summing the HQs for all chemicals for likely exposure scenarios for a specific population. An HI greater than 1 indicates that the potential exists for noncarcinogenic health effects to occur as a result of site-related exposures, with the potential for health effects increasing as the HI increases. When the HI calculated for all chemicals for a specific population exceeds 1, separate HI values are then calculated for those chemicals which are known to act on the same target organ. These discrete HI values are then compared to the acceptable limit of 1 to evaluate the potential for noncarcinogenic health effects on a specific target organ. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media. A summary of the noncarcinogenic hazards associated with these chemicals for each exposure pathway is presented in Table 7 of Appendix II.

As seen in Table 7, the noncancer HIs exceed EPA's threshold value of 1 for the future child resident and adult worker in Plume 1. Noncancer hazards were evaluated for the child only as the most sensitive residential receptor. Hazards to the child are considered representative of any hazards to the adult resident. The hazard estimates were driven by exposure to PCE, TCE, cis-1,2-DCE and vinyl chloride for the child resident and TCE and cis-1,2-DCE for the adult worker. Although noncarcinogenic hazards were also evaluated for the resident and worker within Plume 2, the resulting hazards were below the target HI of 1.

For carcinogens, risks are generally expressed as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to a carcinogen, using the cancer slope factor (SF) for oral and dermal exposures and the inhalation unit risk (IUR) for inhalation exposures. Excess lifetime cancer risk for oral and dermal exposures is calculated from the following equation, while the equation for inhalation exposures uses the IUR, rather than the SF:

Risk = LADD x SF

Where: Risk = a unitless probability (1×10^{-6}) of an individual developing cancer
LADD = lifetime average daily dose averaged over 70 years (mg/kg-day)
SF = cancer slope factor, expressed as [1/(mg/kg-day)]

These risks are probabilities that are usually expressed in scientific notation (such as 1×10^{-4}). An excess lifetime cancer risk of 1×10^{-4} indicates that one additional incidence of cancer may

occur in a population of 10,000 people who are exposed under the conditions identified in the Exposure Assessment. Current Superfund guidance identifies the range for determining whether a remedial action is necessary as an individual lifetime excess cancer risk of 1×10^{-6} to 1×10^{-4} (corresponding to a one-in-a-million to a one-in-ten-thousand excess cancer risk), with 1×10^{-6} being the point of departure.

As summarized in Table 8 of Appendix II, the estimated cancer risk exceeded EPA's target risk range of 1×10^{-6} to 1×10^{-4} for the future resident and adult worker exposed to groundwater within Plume 1. Total carcinogenic risks greater than 1×10^{-4} were primarily attributable to TCE, vinyl chloride and chromium. However, chromium is not considered a site-related COC as discussed in further detail under the uncertainties section. Cancer risks estimated for the resident and worker within Plume 2 were equal to the upper bound limit (1×10^{-4}) and within the acceptable risk range established by the NCP, respectively, with 1×10^{-6} being the point of departure. In addition, 1,1-DCE was detected within Plume 2 at concentrations above the Puerto Rico Water Quality Standard and Federal MCL (7 ug/L), which are based on liver impacts resulting from long-term exposures. Cancer risks could not be quantitatively evaluated for 1,1-DCE as there is no SF or IUR associated with it. Nevertheless, this chemical is classified as a potential human carcinogen by EPA. Given this uncertainty, in addition to exceedances of Commonwealth and Federal health-based drinking water standards, 1,1-DCE is considered a site-related COC as well.

During the RI, a vapor intrusion investigation was conducted to assess the potential migration of VOC-contaminated vapors into both residential and commercial structures in Cabo Rojo and to evaluate impacts on indoor air. The indoor air and sub-slab vapor results were compared to EPA vapor intrusion screening levels (VISLs) based on a cancer risk of 1×10^{-6} and hazard quotient of 1 for both residential and commercial use. Results of the data collected indicate that elevated sub-slab vapor and indoor air concentrations predominantly consisted of site-related PCE and TCE, which were primarily associated with the CRPDC and EQP source areas. CRPDC is currently an inactive facility, and EQP is still in use as a commercial facility. Although indoor air concentrations at EQP exceed residential VISLs, the detected concentrations do not exceed commercial VISLs. Indoor air concentrations of site-related contaminants at CRPDC do not exceed either residential or commercial VISLs. However, elevated sub-slab concentrations indicate there is a potential risk from vapors migrating into the structure in the future (see Table 9 of Appendix II). Additional discussion of the sub-slab vapor and indoor air results can be found in the HHRA.

In summary, the results of the HHRA indicate that there are significant carcinogenic risks and noncarcinogenic health hazards to potentially exposed populations resulting from exposure to groundwater onsite. Site worker and resident exposure to PCE, TCE, cis-1,2-DCE and vinyl chloride in groundwater from Plume 1 results in either an excess lifetime cancer risk that exceeds the acceptable risk range established by the NCP or an HI above the acceptable level of 1, or both. 1,1-DCE was identified within Plume 2 at concentrations above the Puerto Rico Water Quality Standard and Federal MCL as well. Future workers may also be exposed to elevated VOC concentrations in air via the inhalation of vapors emanating into ambient air by vaporization from underlying soil or groundwater contamination at the CRPDC and EQP source areas. The noncarcinogenic hazards and carcinogenic risks from all COPCs as well as the indoor air and sub-slab vapor intrusion results can be found in the HHRA.

Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include:

- environmental chemistry sampling and analysis
- environmental parameter measurement
- fate and transport modeling
- exposure parameter estimation
- toxicological data

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there is significant uncertainty as to the actual levels present. Environmental chemistry-analysis error can stem from several sources including the errors inherent in the analytical methods and characteristics of the matrix being sampled.

Uncertainties in the exposure assessment are related to estimates of how often an individual would actually come in contact with the COCs, the period of time over which such exposure would occur, and in the models used to estimate the concentrations of the COCs at the point of exposure.

Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the risk assessment provides upper-bound estimates of the risks to populations near the Site, and is highly unlikely to underestimate actual risks related to the Site. In addition, chromium in groundwater was shown to contribute unacceptable risk for future residents using water from Plume 1. However, it is likely that the risk due to chromium is overestimated because it was assumed that all the chromium present is in the more toxic hexavalent form. This is conservative since chromium in the environment is generally dominated by the less toxic, trivalent form. Furthermore, chromium was not detected at levels exceeding the Puerto Rico Water Quality Standard and Federal MCL in groundwater. Historical information does not indicate the use of hexavalent chromium in source area processes as well. Therefore, chromium is not considered a site-related contaminant.

Due to a limited number of detections, a 95% UCL could not be calculated for several of the COPCs identified in Plumes 1 and 2. Instead, the maximum detected concentrations were used as the EPC for each of these COPCs. Using the maximum concentration as the EPC is a conservative (*i.e.*, health protective) assumption, which is likely to overestimate risks from exposure to groundwater contaminants in these exposure areas.

More specific information concerning public health risks, including a quantitative evaluation of the degree of risk associated with various exposure pathways, is presented in the risk assessment report.

ECOLOGICAL RISK ASSESSMENT

A SLERA was conducted for the Site to evaluate the potential for risks to ecological receptors from exposure to Site media. Conservative assumptions were used to identify exposure pathways and, where possible, quantify potential ecological risks.

SLERA results indicate that although two Site-related COPCs were identified in surface soil (cis-1,2-DCE and TCE), there is no suitable habitat for ecological receptors due to the urban nature of the area and the fact that the sample location is in a small area of mowed turf between a parking lot and a building, posing no exposure risk to wildlife receptors. Non-Site-related contaminants were detected near sediment sample location SD-02 (near CRPDC and RETO Plant II) and upstream source areas. There is no risk to ecological receptors from exposure to the Site-related chemicals.

RISK ASSESSMENT SUMMARY

Based on the results of the human health and ecological risk assessments, a remedial action is necessary to protect public health, welfare, and the environment from actual or threatened releases of hazardous substances in the soil and groundwater.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) are specific goals to protect human health and the environment. These objectives are based on available information and standards, such as applicable or relevant and appropriate requirements (ARARs), to-be-considered (TBC) guidance, and Site-specific, risk-based levels.

Although unassociated with direct-contact risk to human health, concentrations of COCs detected in soil samples at CRPDC (PCE up to 3,700 µg/kg) and EQP (PCE up to 73 µg/kg and cis-1,2-DCE up to 480J µg/kg) indicate contaminated soil could serve as a continuing source of groundwater contamination for Plume 1 as well as contaminated soil vapor at CRPDC and EQP. As a result, soil is a medium of concern, and RAOs have been developed for the Site soils.

PCE and its daughter products and 1,1-DCE were detected above RI screening criteria in both groundwater plumes. The HHRA demonstrated that contaminated groundwater poses human health risks. Therefore, groundwater is a medium of concern and RAOs have been developed for groundwater.

Surface water and sediment samples were collocated. No COCs were detected in surface water and sediment samples collected from drainage features near source areas. As a result, both surface water and sediment are not considered media of concern, and no RAOs have been developed for either medium.

Based on the results of indoor air and sub-slab vapor sampling collected in the RI, vapor containing PCE (and to a lesser degree, TCE) in sub-slab has been detected at several buildings, including the CRPDC and EQP buildings. The HHRA report indicates there is a potential risk from vapors migrating into the CRPDC building in the future, but vapor intrusion would not currently pose a risk to workers were it to be occupied. At EQP, the HHRA indicated that vapor intrusion may be occurring, but not at levels currently causing a risk to workers. By addressing

the soil and groundwater contamination at CRPDC and EQP, soil vapor contamination at these two areas would also be addressed.

To protect human health and the environment, RAOs have been established.

RAOs for Soil

- Prevent contaminated soil from serving as a source of groundwater contamination;
- Minimize contaminated soil from serving as a source of current and future vapor intrusion.

RAOs for Groundwater

- Prevent human exposure to contaminated groundwater with concentrations above federal or more stringent Commonwealth standards;
- Restore contaminated groundwater as a potential source of drinking water in a reasonable time period by reducing contaminant levels to the federal MCLs or more stringent Commonwealth standards;
- Minimize contaminated groundwater from serving as a source of current and future vapor intrusion.

REMEDIATION GOALS (RGS)

To meet the RAOs, RGs were developed to aid in defining the extent of contaminated groundwater requiring remedial action. RGs are chemical-specific measures for each media and/or exposure route that are expected to be protective of human health and the environment. They are derived based on comparison to ARARs, risk-based levels, and background concentrations, with consideration also given to other requirements such as analytical detection limits, guidance values, and other pertinent information.

RGs for Soil

There are no promulgated federal or Commonwealth chemical-specific ARARs for soil. To meet the RAOs for protection of groundwater, Site-specific impact to groundwater soil cleanup levels were developed. The RGs for soil are shown in Table 10 of Appendix II.

RGs for Groundwater

Groundwater at the Site is classified as Class SG, which includes all groundwater as defined in Puerto Rico's Water Quality Standards (PRWQS) [Puerto Rico Environmental Quality Board [PREQB 2016]), that is suitable for drinking water use and for use as a source of potable water supply in the Commonwealth of Puerto Rico. The RGs for contaminants in groundwater are the federal Maximum Contaminant Levels (MCLs) or the more stringent Commonwealth standards. Table 11 of Appendix II presents the RGs for groundwater.

Screening Criteria for Vapor Intrusion

The sub-slab contaminant-screening criteria and indoor air concentrations requiring mitigation were based on EPA's VISLs guidance for commercial properties and are presented in Table 12 of Appendix II. However, the VISLs referenced are sometimes updated based on

evolving toxicity information. Therefore, the screening criteria may change. The latest screening criteria for vapor intrusion will be used to monitor sub-slab and indoor air quality over time at CRPDC and EQP.

DESCRIPTION OF THE ALTERNATIVES

Section 121(b)(1) of CERCLA, 42 U.S.C. § 9621(b)(1), mandates that remedial actions must be protective of human health and the environment, be cost-effective, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. Section 121(b)(1) of CERCLA also establishes a preference for remedial actions that employ, as a principal element, treatment to permanently and significantly reduce the volume, toxicity, mobility of the hazardous substances, pollutants, and contaminants at a site. Section 121(b)(1) of CERCLA, 42 U.S.C. § 9621(d), further specifies that a remedial action must attain a level or standard of control of the hazardous substances, pollutants, and contaminants that at least attains ARARs under federal and Commonwealth laws, unless a waiver of the ARAR can be justified pursuant to Section 121(d)(4) of CERCLA, 42 U.S.C. § 9621(d)(4).

The time frames presented below for each alternative reflect only the time required to construct or implement the remedy and do not include the time required to design the remedy, negotiate the performance of the remedy with any potentially responsible parties, or procure contracts for design and construction.

The timeframes for Alternatives 2 and 3 are estimated to be 2 to 5 years for construction, 5 years for O&M, and 30 years for monitoring.

The cost estimates, which are based on available information, are order-of-magnitude engineering cost estimates that are expected to be within +50 to -30 percent of the actual cost of the project.

COMMON ELEMENTS

There are several common elements (CEs) that are included in remedial alternatives 2 and 3. The common elements listed below do not apply to the No Action alternative.

Pre-Design Investigation (PDI) and Pilot Study

The nature and extent of soil contamination in the vadose zone associated with the CRPDC source area would be further refined in a PDI. At CRPDC, the vadose zone is approximately 12 feet thick; soil samples would be collected from ground surface to a few feet below the water table and analyzed for VOCs. Groundwater samples would be collected at different depths to determine the potential of residual sources for groundwater contamination.

It may be difficult to delineate the nature and extent of vadose zone contamination at EQP because it is an active facility and the building has a low ceiling. It will likely be necessary to use unconventional, small-scale, or manual drilling methods to obtain soil samples below the building foundation. The specific methods that will be used to delineate contamination below the building foundation will be defined during the remedial design.

Design parameters for SVE/DPE would be obtained through the performance of a pilot study.

For Alternatives 2 and 3, a pilot study of DPE would be conducted to determine flow rates, required vacuum, and radius of influence (ROI) of a DPE well. The pilot study also would evaluate treatment requirements of the collected vapors and extracted groundwater.

Long Term Monitoring and MNA at Plume 1

Annual sampling of the existing monitoring well network in Plume 1 would be conducted. It is assumed that PRASA will not conduct routine quarterly monitoring at the Ana Maria supply well because it is no longer active and will not be returned to service. The Ana Maria well will be sampled during the Remedial Action (RA) as part of the Plume 1 monitoring well network. Annual monitoring well network samples would be analyzed for VOCs and MNA parameters. As mentioned above, the reducing conditions seem to vary on a temporal basis. Additional rounds of data will allow for a better understanding of how biodegradation potential in the aquifer may vary with time. Contaminant migration and concentration trends would continue to be evaluated. The monitoring program would proceed until concentrations are in compliance with the RGs for several monitoring rounds, consistent with EPA's Groundwater Remedy Completion Strategy (EPA 2014). The remediation timeframe is estimated to be 30 years.

Based on the CSM, the alluvium is localized between wells MW-4 and MW-15. Contaminated groundwater originating from CRPDC in the alluvium would travel north toward the area of MW-15 then migrate into the overburden and the highly fractured bedrock zone observed in the Pozo Escuela bedrock well (this well that formerly supplied a school, was taken out of service and was converted to monitoring well and sampled during the RI, see Figure 2). Contaminant concentrations in MW-2 and MW-1 were below 10 ug/L during Round 2 sampling in 2017, and the detection of cis-1,2-DCE and vinyl chloride indicated the occurrence of reductive dechlorination in the overburden near the source area. Contaminant concentrations in Pozo Escuela were also relatively low (highest PCE concentration was 5.1 ug/L in Round 2). However, increased concentrations of COCs in MW-4 and MW-15 from Round 2 (2017) to Post-Maria (2018) sampling events indicate that the source area at CRPDC continues to contribute to groundwater contamination in the alluvium (See Figure 3).

Because the highly fractured bedrock is very transmissive, concentrations of contaminants entering this zone are expected to decrease through dilution and dispersion. This was observed in bedrock well MW-4R (at CRPDC) where COC concentrations decreased slightly from Round 2 (2017) to Post-Hurricane Maria sampling in 2018. Contaminated groundwater originating from EQP was also detected in the highly fractured bedrock zone where dilution and dispersion may also play a role in decreasing contaminant concentrations. As additional rounds of groundwater monitoring data are collected as part of the long-term monitoring program, the data would be used to assess the ongoing attenuation of the groundwater contamination, mechanisms contributing to the attenuation of Site contaminants, and progress toward meeting the RGs.

Long Term Monitoring and MNA at Plume 2

Annual sampling of the existing monitoring well network in Plume 2 would be conducted. 1,1-DCE in Plume 2 can degrade under aerobic or anaerobic conditions but is dependent on the presence of the appropriate microbes and substrates to enhance the degradation. Data on VOCs and MNA parameters will be collected from Plume 2 wells to continue to assess MNA. The monitoring program would continue until contaminant concentrations show several consecutive rounds of compliance with the RGs according to EPA's Groundwater Remedy

Completion Strategy (EPA 2014).

Monitoring of Active PRASA Supply Wells

Analytical data and operational data for Club de Leones and Cabo Rojo 1 through 3 public supply wells would be obtained from PRASA. These supply wells are currently active and operating but have not historically been impacted by Site-related contamination. PRASA is expected to continue routine quarterly sampling of these wells to ensure they continue to meet drinking water standards.

Site Restoration

After the completion of all remedial actions, associated equipment and infrastructure would be properly removed or demobilized. The Site would be restored to pre-remedial action conditions as much as possible. Site restoration activities may include but are not limited to repairing the building slabs and pavement.

Institutional Controls

Institutional Controls (ICs) are non-engineered controls, such as property or groundwater use restrictions placed on real property by recorded instrument, by a governmental body by law or regulatory activity, or through informational devices such as public notices, that reduce or limit the potential for human exposure to contamination and/or protect the integrity of a remedy.

While groundwater contamination is still present, institutional controls will be implemented to help control and limit exposure to hazardous substances in the groundwater at the Site. The types of institutional controls which will be relied upon for the groundwater at the Site are: 1) existing local laws that limit installation of drinking water wells without a permit; 2) informational devices will be used to prevent well installation and prohibit occupancy, use, or new construction in the source areas unless appropriate vapor-intrusion investigations are conducted and/or mitigation measures (including periodic monitoring, as necessary) are implemented; and 3) advisories published in newspapers, periodic letters sent to local government authorities informing them of the need to prevent well installation, and inspection of local and/or Commonwealth health department records to insure that no wells are installed that could impact the groundwater plume or result in exposure to contaminated groundwater.

Five-Year Reviews

All the active alternatives assume that five-year reviews would be conducted for the Site. Although this remedy will not result in hazardous substances, pollutants, or contaminants remaining at the Cabo Rojo Groundwater Contamination Superfund Site above levels that would allow for unlimited use and unrestricted exposure, it may take more than five years to attain the remediation goals. Pursuant to Section 121(c) of CERCLA, policy reviews will be conducted no less often than once every five years after the completion of construction to ensure that the remedy is, or will be, protective of human health and environment.

EPA Region 2 Clean and Green Policy

The environmental benefits of the active alternatives may be enhanced by giving consideration,

during the design, to technologies and practices that are sustainable in accordance with EPA Region 2's Clean and Green Energy Policy. This would include consideration of green remediation technologies and practices. Some examples of practices that would be applicable are those that reduce emissions of air pollutants, minimize fresh water consumption, incorporate native vegetation into re-vegetation plans, and consider beneficial reuse and/or recycling of materials, among others.[1]

REMEDIAL ALTERNATIVES

The following alternatives were considered for the Site:

Alternative 1 – No Action

The No Action Alternative is required by the NCP to provide an environmental baseline against which impacts of various other remedial alternatives can be compared. Under this alternative, no remedial activities would be initiated at the Site to address contaminated soil and groundwater above remediation goals or otherwise mitigate the associated risks to human health from exposure to groundwater contamination.

Alternative 2 – Soil Vapor Extraction/Dual Phase Extraction (SVE/DPE), Monitored Natural Attenuation (MNA), a Contingency Remedy of In-Situ Groundwater Treatment and Institutional Controls

This alternative would provide active treatment SVE/DPE to the target soil remediation zones and potentially underlying groundwater at CRPDC and EQP (Figures 4 and 5). The plumes would be managed through the implementation of MNA and long-term monitoring as described previously.

SVE/DPE Installation, Operation, and Maintenance at Source Areas

At the CRPDC property, DPE wells would be installed to address the vadose zone within the target soil remediation zone to be defined based on the PDI results. Groundwater extraction would be a component of DPE to remove groundwater contamination at shallow depths also within the target soil remediation zone. At EQP, SVE wells and groundwater extraction wells would be installed separately to address the vadose zone and the shallow groundwater contamination since the groundwater aquifer is a confined unit. The existing building slab and pavements would be inspected, improved, and sealed if necessary and would serve as a cap for the DPE and SVE systems. The SVE/DPE remedy would serve to mitigate potential vapor intrusion into the CRPDC and EQP buildings.

The vapor treatment system would likely consist of compressors, piping, an air-water separator, as necessary, and vapor-phase activated carbon units. Vapor discharged would meet Puerto Rico discharge requirements. The air flow rate (vacuum) and concentrations of contaminants, oxygen, and carbon dioxide in the extracted vapor would be monitored regularly.

The water treatment system would be installed in the same area/building as the vapor treatment system and would treat extracted water using air strippers or liquid-phase activated carbon units to be determined during the RD. Depending on the groundwater extraction rate of the DPE

[1] https://www.epa.gov/greenercleanups/epa-region-2-clean-and-green-policy

system, the treated water might be discharged to on-Site drainage systems or be re-injected into the subsurface. Additional sampling and analysis would be conducted on the vapor and water effluent streams to ensure substantive discharge requirements for each medium are met.

SVE/DPE Performance Evaluation at Source Areas

The effectiveness of SVE and/or DPE in the vadose zone soil would be evaluated by collecting soil gas samples. An evaluation will be conducted prior to shut down of the system in the event that VOC concentrations in extracted vapor are reduced to an asymptotic level such that continued operation of the system is no longer effective or in-situ concentrations meet the soil RGs.

The effectiveness of SVE/DPE in minimizing soil contamination from serving as sources of groundwater and soil vapor contamination would be evaluated in conjunction with groundwater and sub-slab vapor sample results. Plume 2 and the dilute portion of Plume 1 would be managed through the implementation of MNA and long-term monitoring. The RGs for soil and groundwater, along with the vapor intrusion screening levels will be used to determine the effectiveness of the SVE/DPE.

Sub-Slab and Indoor Air Monitoring

Sub-slab and indoor air samples at the CRPDC and EQP properties would be collected periodically to monitor the potential or presence of vapor intrusion. Results of vapor samples would be compared to the sub-slab and indoor air VISLs. Monitoring would help inform the progress and effectiveness of the active source remedy (SVE or DPE) and would be conducted until the vadose zone source areas are remediated to levels that eliminate the need to mitigate vapor intrusion at the point of exposure. Post treatment vapor monitoring would be conducted to confirm the sources have been remediated and no longer contribute to vapor intrusion.

Potential contributions of COCs from sources within the buildings would be considered during the vapor intrusion monitoring, especially at the EQP facility where active business operations (printing) may utilize VOCs.

Triggers for In-situ Groundwater Treatment for Plume 1

Active groundwater treatment beyond that which will occur as part of DPE is not expected to be required. However, if needed, Alternative 3 is a contingency in-situ groundwater remedy. As additional data from the PDI and groundwater monitoring become available, especially in the vicinities of the two source areas, considerations and/or conditions that may indicate the need to trigger the contingency remedy include the following:

- Detection of NAPL in the vadose zone soil, or PCE/TCE concentrations indicative of NAPL at the water table, indicating a continuing source of groundwater contamination;
- Significant increase of contaminant concentrations in MW-15 and/or MW-3R/MW-3RS to greater than one order of magnitude above the RGs and/or an increasing trend of contaminant concentration in Plume 1 wells, such as Ana Maria, MW-2, and MW-1;
- Detections of PCE and/or TCE in sentinel wells, such as MW-16, USGS-OW-1 (for PCE or TCE), and PRASA-1; and
- Detections of PCE and/or TCE in the public supply wells.

Alternative 3 – SVE/DPE, In-Situ Groundwater Treatment, MNA and Institutional Controls

This alternative would provide active treatment (SVE/DPE) to the target soil remediation zones and shallow contaminated groundwater at CRPDC and EQP. SVE/DPE installation, operation, and maintenance at source areas; SVE/DPE performance evaluation at source areas; and sub-slab and indoor air monitoring would be conducted as described in Alternative 2. In addition, under this alternative, in-situ treatment would be part of the alternative. Plume 2 and the dilute portion of Plume 1 would be managed through the implementation of MNA and long-term monitoring.

Pilot Study for Contaminated Groundwater at the Source Areas

During the PDI at CRPDC, groundwater screening borings would be installed within the target treatment zone to obtain the vertical profile of groundwater contamination. The data would be used for the design of *in-situ* treatment. A pilot study would be conducted to collect site specific design parameters and groundwater extraction rate.

This alternative assumes that the PDI results from the source area at EQP indicate that groundwater contamination at EQP requires treatment. A well may be installed to the north of EQP building for a pilot study. The pilot study may be conducted by releasing amendment (additives to promote reduction by biological degradation) from the well to the east of EQP building) and monitored in wells to the north and west of the EQP building. Wells may also be installed at an angle to reach below the EQP building for the pilot study.

In-Situ Groundwater Treatment at CRPDC and EQP

Under this alternative, it is assumed that the full depth of contaminated groundwater one order of magnitude above the RGs will be treated at both the CRPDC and EQP properties. The actual treatment zone would be refined during the remedial design and/or the remedial action. Groundwater concentrations less than one order of magnitude above the RG would be addressed through MNA and periodic monitoring.

Enhanced Anaerobic Biodegradation (EAB) is assumed to be the technology for in-situ treatment. During the remedial design, based on additional investigation results, other in-situ treatment technologies may be considered.

For the CRPDC source area, a grid of direct push injection points would be drilled at the CRPDC property. A groundwater extraction well would be installed to provide water for the injections. Two clusters of monitoring wells would be installed to monitor the progress of EAB treatment. An additive that has the characteristics of being easy to distribute and long lasting would be preferred at CRPDC.

For the EQP source area, a recirculation system consisting of one injection well screened in shallow weathered bedrock would be installed along the east side of the EQP building. An extraction well would be installed west of the injection well to induce a hydraulic gradient to

facilitate the additive distribution. Two monitoring wells screened in shallow bedrock would be installed to assess in-situ treatment progress. An additive that would migrate with groundwater flow and has a high retention capacity in a highly weathered bedrock zone would be preferred at EQP.

Methane generated during the EAB treatment could be extracted by the SVE system, or it may travel with groundwater downgradient and would need to be managed and monitored. Monitoring of vertical migration of soil vapor from groundwater to the vadose zone would be considered during RD and may be implemented during EAB treatment.

The effectiveness of in-situ treatment would be evaluated by collecting groundwater samples from monitoring wells installed in the target groundwater remediation zones. Sample results from these wells will be reviewed together with monitoring well data from the plume downgradient of the treatment zone in Plume 1 for evaluation of the long-term effectiveness. It is assumed that only one round of EAB treatment would be performed. Following the first round of treatment, the need for additional rounds of treatment would be assessed based on the results of the post-treatment groundwater monitoring results.

EVALUATION OF REMEDIAL ALTERNATIVES

In selecting a remedy for a site, EPA considers the factors set forth in CERCLA Section 121, 42 U.S.C. § 9621, by conducting a detailed analysis of the remedial alternatives pursuant to the requirements of the NCP at 40 C.F.R. § 300.430(e)(9), the EPA's *Guidance for Conducting Remedial Investigations and Feasibility Studies*, OSWER Directive 9355.3-01, and the EPA's *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents*, OSWER 9200.1-23.P. The detailed analysis consists of an assessment of the individual alternatives against each of the nine evaluation criteria set forth at 40 C.F.R. § 300.430(e)(9)(iii) and a comparative analysis focusing upon the relative performance of each alternative against those criteria.

The following **"threshold"** criteria are the most important and must be satisfied by any remedial alternative in order to be eligible for selection:

1. **Overall protection of human health and the environment** addresses whether or not a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.
2. **Compliance with ARARs** addresses whether a remedy would meet all of the applicable or relevant and appropriate requirements of other federal and Commonwealth environmental statutes and regulations or provide grounds for invoking a waiver. Other federal or Commonwealth advisories, criteria, or guidance are "To Be Considered" (TBC). While TBCs are not required to be adhered to by the NCP, the NCP recognizes that they may be very useful in determining what is protective of a site or how to carry out certain actions or requirements.

The following **"primary balancing"** criteria are used to make comparisons and to identify the major tradeoffs between alternatives:

3. **Long-term effectiveness and permanence** refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once remediation

goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.

4. **Reduction of toxicity, mobility, or volume through treatment** is the anticipated performance of the treatment technologies, with respect to these parameters, that a remedy may employ.

5. **Short-term effectiveness** addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation of the remedy.

6. **Implementability** is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.

7. **Cost** includes estimated capital, O&M, and present-worth costs.

The following **"modifying"** criteria are used in the final evaluation of the remedial alternatives after the formal comment period, and they may prompt modification of the preferred remedy that was presented in the Proposed Plan:

8. **Commonwealth (State) acceptance** indicates whether, based on its review of the RI/FS report, HHRA, and Proposed Plan, the Commonwealth concurs with, opposes, or has no comments on the proposed remedy.

9. **Community acceptance** refers to the public's general response to the alternatives described in the RI/FS report, HHRA, and Proposed Plan.

OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

All COCs are currently present above the RGs in at least one medium (soil, vapor, and groundwater). Contaminated groundwater in Plume 1 poses unacceptable human health risks to future residents and workers. Contaminated vapor has the potential to pose human health risks at CRPDC and EQP buildings due to vapor intrusion. Cancer risks estimated for Plume 2 were equal to the upper bound limit (1×10^{-4}) and within the acceptable risk range established by the NCP, respectively, with 1×10^{-6} being the point of departure. 1,1-DCE was, however, detected within Plume 2 at concentrations above the Puerto Rico Water Quality Standard and Federal MCL (7 ug/L)

The No Action alternative would not be protective of human health and the environment at the source areas because no action would be taken to remediate or monitor contamination. The No Action alternative would not meet the RAOs.

Alternatives 2 and 3 would be protective of human health and the environment because they involve active treatment of the source areas in Plume 1 and monitoring of the natural attenuation of groundwater contaminates in both Plumes 1 and 2 until the RAOs and RGs are met. Institutional controls would be implemented to restrict future residential use of groundwater at the Site until RGs are met.

COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

COCs are currently present in groundwater at concentrations exceeding RGs and thus are not currently in compliance with chemical-specific ARARs. Alternative 1 would not take any active measures to ensure compliance with ARARs.

Alternatives 2 and 3 would achieve compliance with chemical-specific ARARs for groundwater through active treatment, natural attenuation, and monitoring. Alternatives 2 and 3 would meet RGs for groundwater and would also achieve risk-based RGs for soil and vapor.

LONG-TERM EFFECTIVENESS AND PERMANENCE

Alternative 1 would not be considered a permanent remedy because no action would be implemented to reduce the level of contamination to below RGs or verify any naturally occurring reduction. Alternative 1 does not provide long-term effectiveness.

Both Alternatives 2 and 3 would permanently reduce contaminant concentrations in the source zones through active treatment. Consequently, contamination in groundwater and vapor would be reduced or eliminated. Alternative 2 would be used to address shallow groundwater. If the PDI or long-term monitoring results reveal higher levels of contamination than expected in groundwater (more than an order of magnitude above the RGs), active groundwater treatment (Alternative 3) would be triggered. As a result, residual risks are expected to be within EPA's acceptable risk range for Alternatives 2 and 3. Alternatives 2 and 3 would have similar long-term effectiveness and permanence.

REDUCTION OF TOXICITY, MOBILITY, OR VOLUME THROUGH TREATMENT

Alternative 1 would not reduce contaminant Toxicity, Mobility, or Volume (T/M/V) through treatment. Alternatives 2 and 3 would reduce T/M/V through treatment in the source areas and would achieve the soil and groundwater RGs. Alternatives 2 and 3 would reduce T/M/V through SVE, DPE, and/or in-situ treatment in the source areas, especially the soil contamination that serves as a source of groundwater contamination. Active treatment in the source areas under both alternatives also is expected to reduce contamination in Plume 1 at the source areas. Alternatives 2 and 3 would achieve the RGs for groundwater over time. For both Plume 1 and Plume 2, natural attenuation would reduce T/M/V under both Alternatives 2 and 3.

SHORT-TERM EFFECTIVENESS

There would be no short-term impact to the community and environment from Alternative 1 as no remedial action would occur. However, this alternative would not meet RAOs within a reasonable time frame. There would be moderate short-term impacts to the local community and workers under Alternative 2 due to the PDI activities and the RA construction and operation at the CRPDC and EQP buildings within the source areas. Both Alternatives 2 and 3 would require that equipment be brought inside buildings to install the SVE and/or DPE system. For both alternatives, a pilot study would be needed to evaluate the zone of influence of SVE/DPE wells. The CRPDC building may need to be modified, and the operation of EQP may need to be shut down temporarily. Alternative 3 would have the greatest short-term impact to the community, impacting the same areas as Alternative 2 in addition to potential disruptions

to nearby traffic for injection/extraction/monitoring well installations. For Alternative 3, a pilot study would need to be conducted to obtain design parameters for in-situ treatment. Following removal of the sources, the time frames for Alternatives 2 and 3 to meet the RAOs would be controlled by the rate of natural attenuation of the plumes. In other words, the RAOs in groundwater will be met once the COCs have degraded and/or been dispersed/diluted to concentrations below their respective criteria. Therefore, the overall time frames for Alternatives 2 and 3 are expected to be similar.

IMPLEMENTABILITY

While all alternatives are implementable, both Alternatives 2 and 3 would need to overcome the challenge of drilling inside the building at the CRPDC property, which may require modification of the building wall to install a rig. There are locations that may not be accessible for any drilling equipment. There is also the possibility of collecting samples under the building using angled drilling. Drilling at EQP could temporarily interrupt the business. The area surrounding the EQP property is highly developed with minimal space between above ground structures. For this reason, Alternative 3 would be somewhat more difficult to implement since in-situ treatment would require installation of additional injection and performance monitoring wells. Additionally, these wells could interfere with utilities and traffic controls. While horizontal wells are a more innovative technology that could overcome the limitations of installing vertical wells, given the dilute nature of Plume 1 it may be difficult to successfully implement this technology in this setting. Alternative 2 is also more in line with the current conceptual site model for the Site, with a contingency for additional in-situ treatment if new information becomes available during the PDI.

For both Alternatives 2 and 3, services and materials are readily available. However, specialized equipment would need to be shipped from the U.S. mainland for both alternatives, increasing the cost. For Alternative 3, amendments (additives) for in-situ treatment would also need to be shipped from the U.S. mainland.

COST

The cost estimates for all three alternatives are provided below.

Groundwater Alternative	Capital Costs	Present Worth O&M Costs	Total Present Worth
1	$0	$0	$0
2	$2,780,000	$2,511,000	$5,300,000
3	$4,866,000	$2,732,000	$7,598,000

COMMONWEALTH/SUPPORT AGENCY ACCEPTANCE

The Puerto Rico Environmental Quality Board concurs with the selected remedy.

COMMUNITY ACCEPTANCE

All the alternatives were made available for the community to review and comment. The

preferred alternative was presented to the community in the Proposed Plan. A public comment period (August 2, 2018, to September 3, 2018) was established to allow the community to review and comment on all the alternatives and the proposed alternative. In addition, a public meeting was held on August 9, 2018. EPA extended the public comment period after the public meeting to October 5, 2018. EPA's response to all public comments received during the comment period, including during the public meeting, is presented in the Responsiveness Summary of this ROD.

PRINCIPAL THREAT WASTE

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a Site whenever practicable (40 CFR Section 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants, or contaminants that act as a reservoir for the migration of contamination to groundwater, surface water, or air, or act as a source for direct exposure. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present significant risk to environment human health or the environment should exposure occur.

No principal threat waste has been identified at the Site.

SELECTED REMEDY

EPA, in consultation with PREQB, selects the remedy summarized in this document to address soil, vapor and groundwater contamination detected at the Site. The selected remedy, Alternative 2 (SVE/DPE, MNA of Groundwater, a Contingency of In-Situ Groundwater Treatment, and Institutional Controls), includes the following major components:

- SVE/DPE to the target soil remediation zones and underlying groundwater at the CRPDC and EQP source areas;
- Installation of vapor monitoring points to assess removal of vapor-phase contamination;
- MNA and long-term monitoring of Plume 2 and the portion of plume 1 outside of the source area;
- Institutional controls; and
- A contingency remedy of in-situ treatment of groundwater in Plume 1 (Alternative 3) if certain conditions are met (e.g., detection of NAPL, contaminant concentration increases in key monitoring wells, detections in sentinel wells, detections in supply wells).

SVE/DPE Installation, Operation, and Maintenance at Source Areas - At CRPDC property, DPE wells will be installed to address the vadose zone within the target soil remediation zone to be defined based on PDI results. Groundwater extraction will be a component of DPE to remove groundwater contamination at shallow depths also within the target soil remediation zone. At the EQP property, SVE wells and groundwater extraction wells will be installed separately to address the vadose zone and the shallow groundwater contamination since the groundwater aquifer is a confined unit. Vapor monitoring points will be installed to track the progress of removing vapor-phase contamination. The existing building slab and pavements will be inspected, improved, and sealed if necessary and will serve as a cap for the DPE and

SVE systems. The SVE/DPE remedy will also serve to mitigate potential vapor intrusion into the buildings at the CRPDC and EQP properties. Construction is estimated at 2 to 5 years, and O&M of the SVE/DPE system is estimated to take approximately 5 years. The long-term groundwater monitoring period is assumed to be 30 years.

SVE/DPE Performance Evaluation at Source Areas – The effectiveness of SVE and/or DPE in the vadose zone soil will be evaluated by collecting soil gas samples. An evaluation will be conducted prior to shut down of the system when VOC concentrations in extracted vapor are reduced to an asymptotic level such that continued operation of the system is no longer effective or in-situ concentrations meet the RGs.

The effectiveness of SVE and/or DPE in minimizing soil contamination from serving as sources to groundwater contamination and soil vapor contamination will be evaluated in conjunction with groundwater and sub-slab vapor sample results. Plume 2 and the portion of Plume 1 outside the target remediation zone will be managed through the implementation of MNA and long-term monitoring. The RGs for soil and groundwater, along with the vapor intrusion screening levels will be used to determine the effectiveness of the SVE/DPE.

Sub-Slab and Indoor Air Monitoring - Sub-slab and indoor air samples at the CRPDC and EQP properties would be collected periodically to monitor the potential or presence of vapor intrusion. Results of vapor samples would be compared to the sub-slab and indoor air VISLs. Monitoring will help inform the progress and effectiveness of the active source remedy (SVE or DPE) and will be conducted until the vadose zone source areas are remediated to levels that eliminate the need to mitigate vapor intrusion at the point of exposure. Post-treatment vapor monitoring will be conducted to confirm the sources have been remediated and no longer contribute to vapor intrusion.

Potential contributions of COCs from sources inside the buildings at the CCRPDC and EQP properties will be considered during the vapor intrusion monitoring, especially at the EQP facility where active business operations (printing) may utilize products containing VOCs.

Triggers for In-Situ Groundwater Treatment for Plume 1 - Additional groundwater treatment beyond that which will occur as part of DPE is not expected to be required. However, this remedy also includes in-situ groundwater remediation as a contingency remedy, as described in Alternative 3. As additional data from the PDI and groundwater monitoring become available, especially in the vicinities of the two source areas, considerations and/or conditions that may indicate the need to trigger the contingency remedy include the following:

- Detection of NAPL in the vadose zone soil or PCE/TCE concentrations indicative of NAPL (e.g., 1% solubility) at the water table, indicating a continuing source of groundwater contamination;
- Significant increase of contaminant concentrations in MW-15 and/or MW-3R/MW-3RS to greater than one order of magnitude above the any RG and/or an increasing trend of contaminant concentration in plume wells, such as Ana Maria, MW-2, and MW-1;
- Detections of PCE and/or TCE in sentinel wells, such as MW-16, USGS-OW-1 (for PCE or TCE), and PRASA-1; and
- Consistent detections of PCE and/or TCE in the supply wells.

Institutional Controls - While groundwater contamination is still present, institutional controls will be implemented to help control and limit exposure to hazardous substances in the groundwater at the Site. The types of institutional controls which will be relied upon for the groundwater at the Site are: 1) existing local laws that limit installation of drinking water wells without a permit; 2) informational devices will be used to prevent well installation and prohibit occupancy, use, or new construction in the source areas unless appropriate vapor-intrusion investigations are conducted and/or mitigation measures (including periodic monitoring, as necessary) are implemented; and 3) advisories published in newspapers, periodic letters sent to local government authorities informing them of the need to prevent well installation, and inspection of local and/or Commonwealth health department records to insure that no wells are installed that could impact the groundwater plume or result in exposure to contaminated groundwater.

Green Remediation - The environmental benefits of the selected remedy may be enhanced by employing design technologies and practices that are sustainable in accordance with the EPA Region 2's Clean and Green Energy Policy.[2]

SUMMARY OF THE RATIONALE FOR THE SELECTED REMEDY

Based upon the requirements of CERCLA, the results of the RI, the detailed analysis of the alternatives, and public comments, EPA has determined that the selected remedy best satisfies the requirements of Section 121 of CERCLA, 42 U.S.C. § 9621, and provides the best balance of tradeoffs among the remedial alternatives with respect to the NCP's nine evaluation criteria, as set forth in Section 300.430(e)(9) of the NCP. This remedy was selected because it will achieve the RAOs and RGs in a similar timeframe compared to the other active alternatives.

SUMMARY OF THE ESTIMATED SELECTED REMEDY COSTS

The estimated capital, present worth O&M, and total present worth costs of the selected remedy are discussed in detail in the FS Report and are $2,780,000, $2,511,000, and $5,300,000, respectively. The cost estimates, which are based on available information, are order-of-magnitude engineering cost estimates that are expected to be within +50 to -30 percent of the actual cost of the project. A cost estimate summary for the selected remedy is presented in Table 13 in Appendix II.

ESTIMATED OUTCOMES OF SELECTED REMEDY

The principal outcomes of the selected remedy are: 1) prevention of human exposure to contaminant concentrations in groundwater above levels that are protective of drinking water; 2) restoration of contaminated groundwater as a potential source of drinking water in a reasonable time period by reducing contaminant levels to the federal MCLs or more stringent Commonwealth standards; 3) prevention of contaminated soil from serving as sources of groundwater contamination; and 4) prevention/minimization of contaminated soil and groundwater from serving as sources of current and future vapor intrusion.

STATUTORY DETERMINATIONS

[2] https://www.epa.gov/greenercleanups/epa-region-2-clean-and-green-policy

Section 121(b)(1) of CERCLA mandates that a remedial action must be protective to human health and the environment, cost-effective, and utilize permanent solutions and alternative treatment technologies to the maximum extent practicable. Section 121(b)(1) of CERCLA also establishes a preference for remedial actions which employ treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, or contaminants at a site. Section 121(d) of CERCLA further specifies that a remedial action must attain a degree of cleanup that satisfies ARARs under federal and Commonwealth laws, unless a waiver can be justified pursuant to Section 121(d)(4) of CERCLA. For the reasons discussed below, EPA has determined that the selected remedy meets the requirements of Section 121 of CERCLA.

Protection of Human Health and the Environment

The selected remedy will protect human health and the environment because it will involve active treatment of the vadose zone source areas and monitoring the natural attenuation of groundwater until cleanup standards are met. Institutional controls will further protect human health by restricting future use of groundwater at the Site until cleanup standards are met.

Compliance with ARARs

The selected remedy for will comply with chemical-specific, location-specific, and action-specific ARARs for soil, vapor and groundwater. Tables 10, 11, and 12 of Appendix II summarized the location specific, action-specific and chemical ARARs, TBC and other guidance.

Cost Effectiveness

Under the NCP, a cost-effective remedy is one which has costs that are proportional to its overall effectiveness (40 CFR Section 300.430(f)(1)(ii)(D)). EPA evaluated the "overall effectiveness" of those alternatives that satisfied the threshold criteria (*i.e.,* were both protective of human health and the environment and ARAR-compliant). Overall effectiveness was further evaluated by assessing three of the five balancing criteria in combination (long-term effectiveness and permanence; reduction in toxicity, mobility, and volume though treatment; and short-term effectiveness). Overall effectiveness was then compared to costs to determine cost-effectiveness.

Each of the active alternatives underwent a detailed cost analysis. In that analysis, capital and O&M costs were estimated and used to develop present-worth costs. In the present-worth cost analysis, O&M costs were calculated for the estimated life of each alternative. The total estimated present-worth cost for implementing the selected remedy is $5,300,000. Based on the comparison of overall effectiveness to cost, the selected remedy meets the statutory requirement that Superfund remedies be cost-effective (NCP Section 300.430(f)(1)(ii)(D))

Utilization of Permanent Solutions and Alternative Treatment (or Resource Recovery) Technologies to Maximum Extent Practicable

The selected remedy provides the best balance of tradeoffs among the alternatives with respect to the balancing criteria set forth in the 40 CFR Section 300.430(f)(1)(i)(B) because it represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner at the Site. The selected remedy satisfies the

criteria for long-term effectiveness and permanence by permanently reducing the mass of contaminants in the soil and groundwater at the Site, thereby reducing the toxicity, mobility, and volume of contamination.

Preference for Treatment as a Principal Element

The selected remedy meets the statutory preference for the use of treatment as a principal element.

FIVE YEAR REVIEW REQUIREMENTS

This remedy will not result in hazardous substances, pollutants, or contaminants remaining at the Cabo Rojo Groundwater Contamination Superfund Site above levels that would allow for unlimited use and unrestricted exposure. However, because it may take more than five years to attain the remediation goals, pursuant to Section 121(c) of CERCLA, policy reviews will be conducted no less often than once every five years after the completion of construction to ensure that the remedy is, or will be, protective of human health and environment.

DOCUMENTATION OF SIGNIFICANT CHANGES FROM PREFERRED ALTERNATIVE OF PROPOSED PLAN

The Proposed Plan for the Site was released for public comment on August 2, 2018, and the public comment period ran from that date through October 5, 2018. The Proposed Plan identified the selected remedy as the Preferred Alternative for the Site.

All written and verbal comments submitted during the public comment period were reviewed by EPA. Upon review of these comments, EPA has determined that no significant changes to the remedy, as it was originally proposed in the Proposed Plan, are necessary.

Appendix I

Figures

Figure 1
Potential Source Areas Location Map
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Figure 1. Overview of Site Area, including the three source areas: Cabo Rojo Professional Dry Cleaners (source to Plume 1), Extasy Q Paints (Source of Plume 1) and Pridco East (historical source to Plume 2).

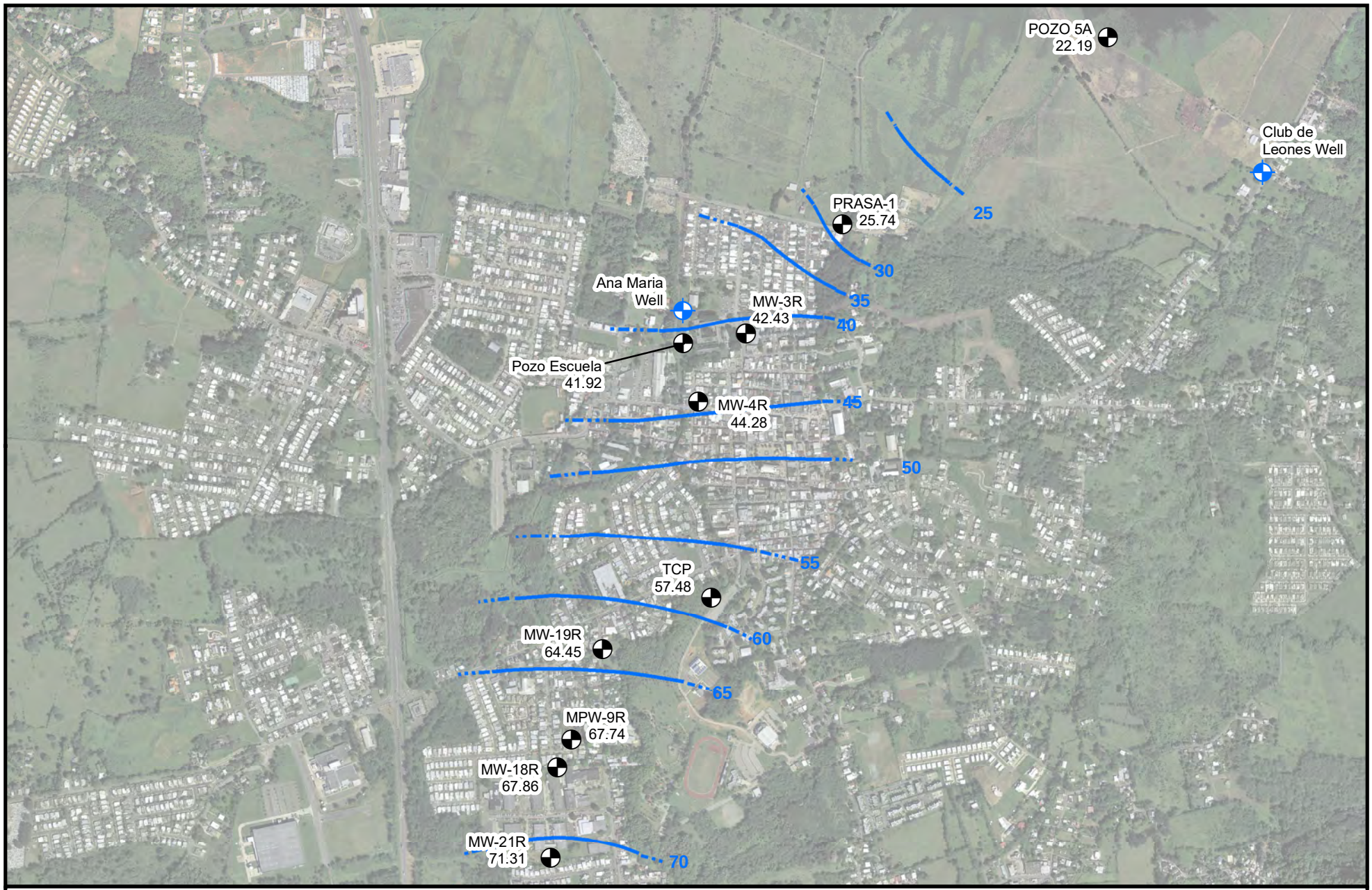


Figure 2
Bedrock Zone Potentiometric Surface Map - Round 2 (5/25/2017)
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Figure 2. Direction of groundwater flow in the bedrock during Round 2 data collection.

USGS-OW1					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
25-35	0.5U	0.5U	0.5U	44	0.17J

MW-16					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
30-40	0.5U	0.5U	0.5U	0.5U	0.25U

Screening Criterion	
Analyte	GW (µg/L)
PCE	5
TCE	5
cis-1,2-DCE	70
1,1-DCE	7
Vinyl Chloride	0.25
1,4-Dioxane	0.46

ANA MARIA					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
75	0.5U	0.5U	0.5U	0.5U	0.25U

MW-1					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
28-38	7.9	1.7	2.5	0.5U	0.14J

POZO ESCUELA						
Port	Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
1	39-59	1.5	0.51	0.55	0.5U	0.037J
2	79.5-86	1.3	0.26J	0.27J	0.5U	0.5U
3	89-96	5.1	0.79	0.68	0.5U	0.5U
4	157-162	0.57	0.5U	0.5U	0.5U	0.5U

MW-2					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
16-26	4.2	1.5	1.9	0.5U	0.11J

MW-15					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
45-55	16	4.2	4.1	0.5U	0.34

MW-4					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
45-55	27	10	44	0.5U	1.2

MW-4R					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
90-100	71	18	18	0.5U	1.2

MW-7					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
30.58-40.58	0.5U	0.5U	0.5U	0.5U	0.25U

MW-19R					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
110-120	0.5U	0.5U	0.35J+	34	0.019J

MW-11					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
22-32	0.5U	0.5U	0.5U	0.5U	0.25U

MW-12					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
17.67-27.67	0.5U	0.5U	0.5U	0.5U	0.25U

MW-10					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
33-43	0.5U	0.5U	0.5U	0.5U	0.25U

PRASA-1					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
105	0.5U	0.5U	0.5U	0.5U	0.25U

MW-3R					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
92-97	1.2	0.68	0.85	0.5U	0.035J

MW-3RS					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
56-66	15	2.2	2	0.5U	0.023J

MW-5						
Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
17-27	0.21U	0.25J	0.25J	0.25J	0.5U	0.5U

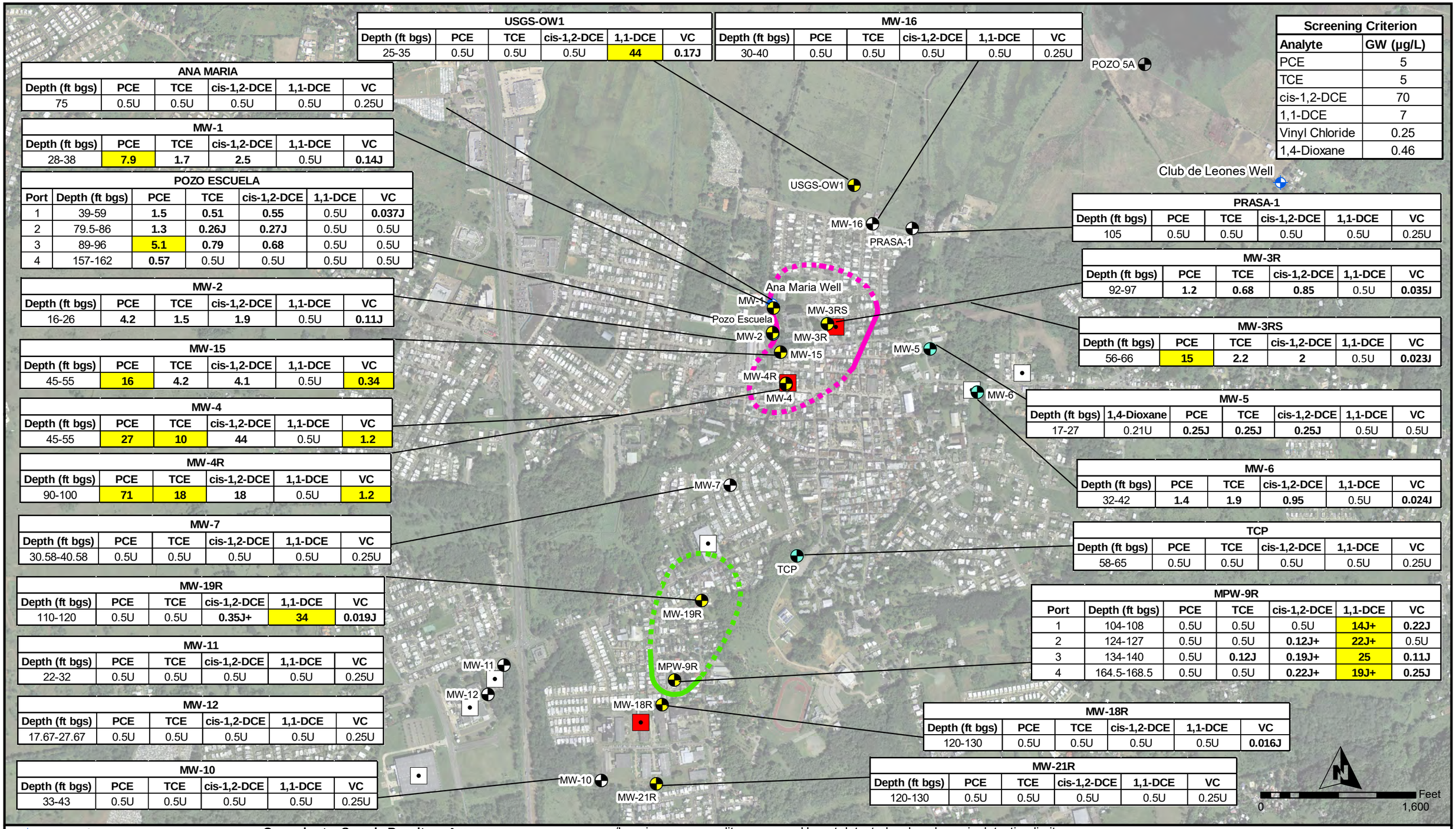
MW-6					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
32-42	1.4	1.9	0.95	0.5U	0.024J

TCP					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
58-65	0.5U	0.5U	0.5U	0.5U	0.25U

MPW-9R						
Port	Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
1	104-108	0.5U	0.5U	0.5U	14J+	0.22J
2	124-127	0.5U	0.5U	0.12J+	22J+	0.5U
3	134-140	0.5U	0.12J	0.19J+	25	0.11J
4	164.5-168.5	0.5U	0.5U	0.22J+	19J+	0.25J

MW-18R					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
120-130	0.5U	0.5U	0.5U	0.5U	0.016J

MW-21R						
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC	
120-130	0.5U	0.5U	0.5U	0.5U	0.25U	



Public Supply Wells
Confirmed Source Area
Former Potential Source Area
PCE plume contour (5 µg/L)
1,1-DCE plume contour (5 µg/L)

Groundwater Sample Results
Detection
Exceedance
Non-Detect
Not Sampled

Acronyms:
PCE - tetrachloroethene
DCE - dichloroethene
TCE - trichloroethene
VC - vinyl chloride
NR - no result

µg/L - micrograms per liter
ft bgs - feet below ground surface
GW - groundwater
DUP - duplicate sample
J+ - estimated value, bias high
J- - estimated value, bias low

U - not detected; value shown is detection limit
Bolded text indicates a detection below screening criteria.
Bolded and yellow highlight indicates a detection at or above screening criteria.
Plume lines are dashed where inferred.

Figure 3
Site-Related Monitoring Well Sampling Results - Round 2
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Figure 3. Round 2 groundwater data showing an outline of Plume 1 (pink) and Plume 2 (green).

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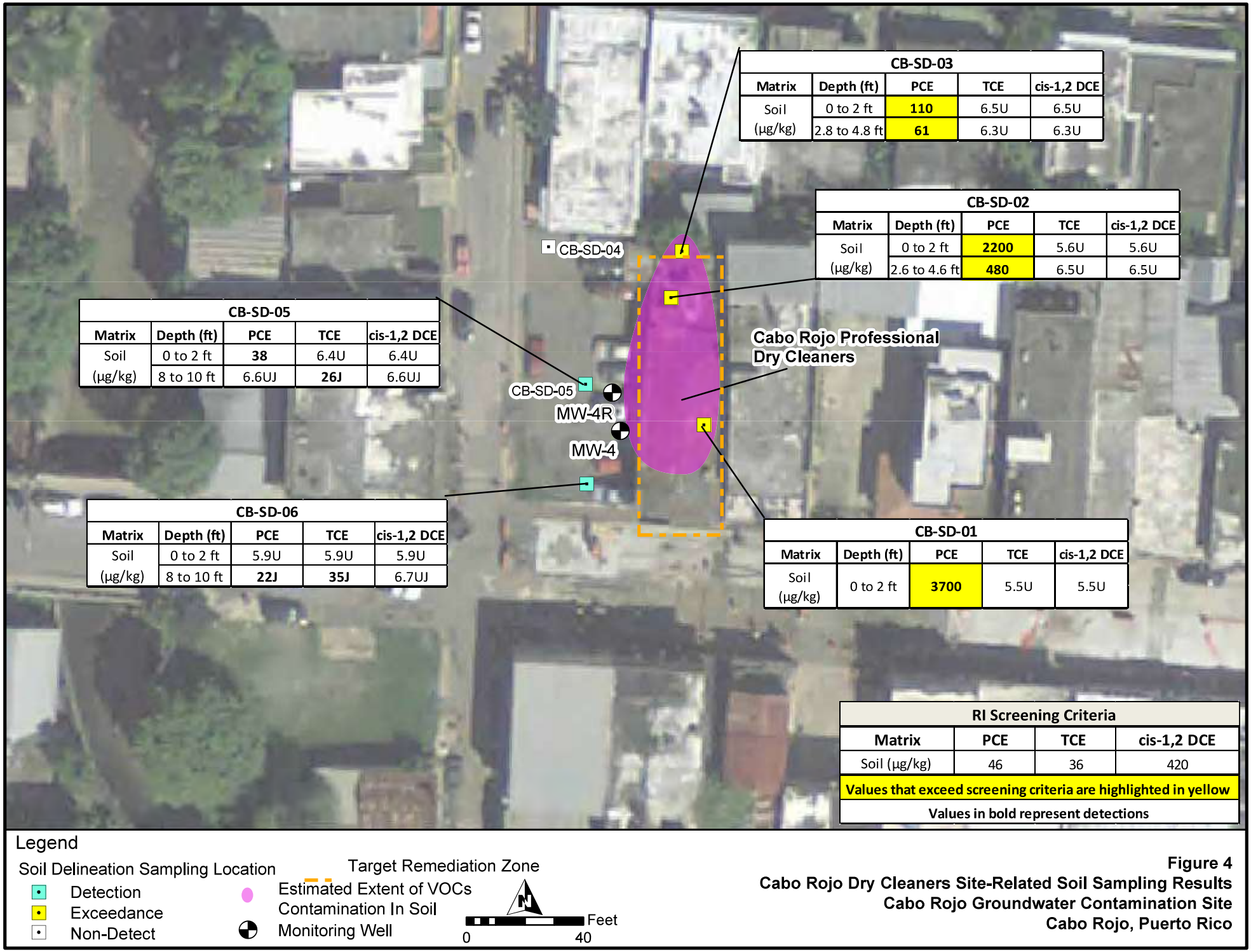

Figure 4
Cabo Rojo Dry Cleaners Site-Related Soil Sampling Results
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Figure 4. Soil sampling results at CRPDC.

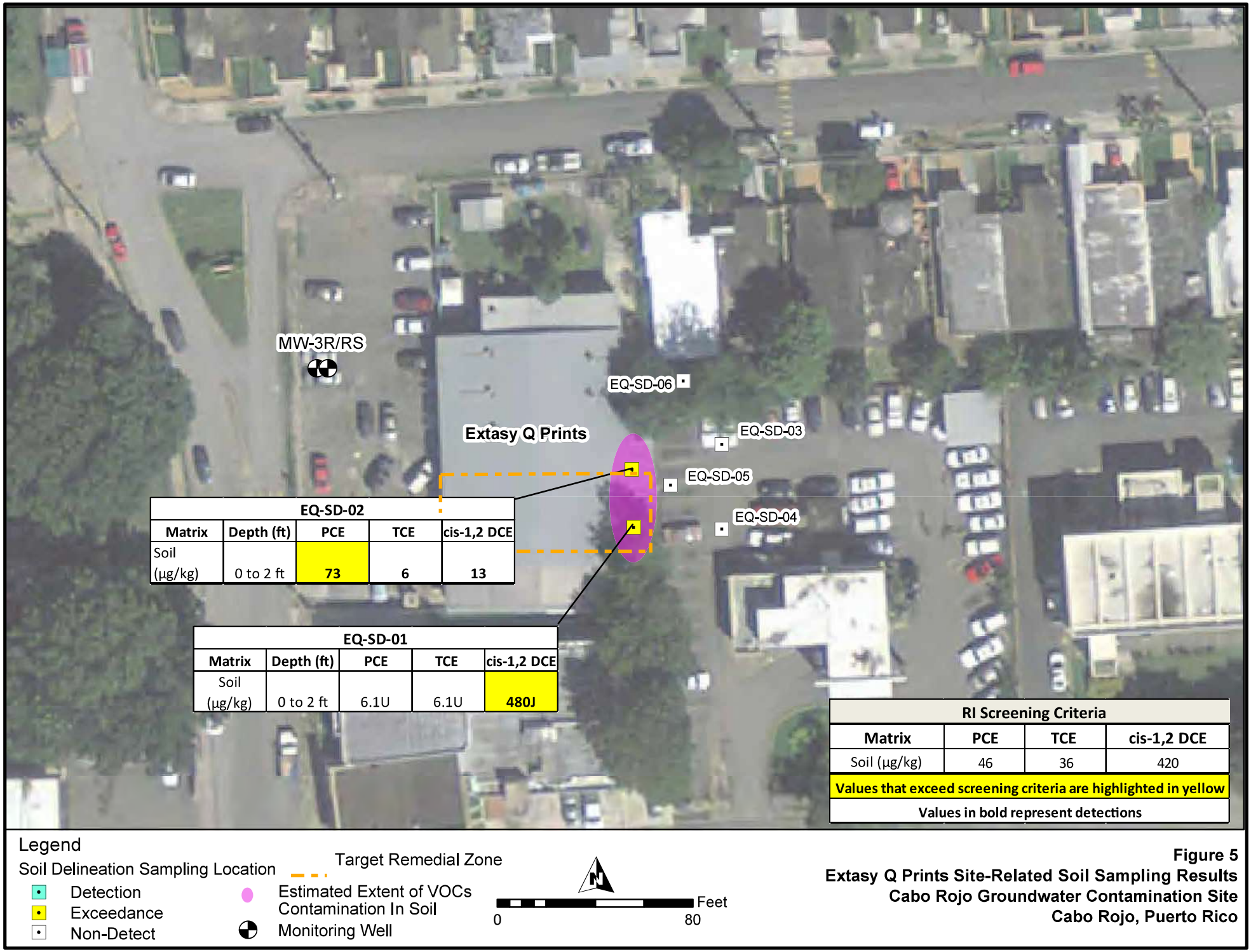

Figure 5
Extasy Q Prints Site-Related Soil Sampling Results
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Figure 5. Soil sampling results at EQP.

APPENDIX II

Tables

Table 1
Indoor Air Sample Results
Cabo Rojo Groundwater
Contamination Site Cabo Rojo,
Puerto Rico

Location	Sample ID	Sample Type	PCE	TCE	cis-1,2-DCE	Vinyl Chloride	1,1-DCE	1,4-Dioxane
Indoor Air Screening Criteria (µg/m³)		Residential	10.80	0.48	NL	0.17	208.57	0.56
		Commercial	47.17	2.99	NL	2.79	876.00	2.45
VI-2	SI-IA-2-1	Indoor Air	**0.14 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-3	SI-IA-3-1	Indoor Air	**0.14 J**	**0.27**	0.16 U	0.2 U	0.16 U	0.14 U
VI-4	SI-IA-4-1	Indoor Air	0.27 U	**0.27**	0.16 U	0.2 U	0.16 U	0.14 U
VI-5	SI-IA-5-1	Indoor Air	**0.61**	**0.11 J**	**0.12 J**	0.2 U	0.16 U	0.14 U
VI-7	SI-IA-7-1	Indoor Air	**0.68**	**0.16 J**	0.16 U	0.2 U	0.16 U	0.14 U
VI-8	SI-IA-8-1	Indoor Air	**0.068 J**	**3.4**	0.16 U	0.2 U	0.16 U	0.14 U
VI-10	SI-IA-10-1	Indoor Air	**0.068 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-11	SI-IA-11-1	Indoor Air	0.27 U	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-12	SI-IA-12-1	Indoor Air	**0.54**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-13	SI-IA-13-1	Indoor Air	0.27 U	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-14	SI-IA-14-1	Indoor Air	**1.2**	**0.054 J**	0.16 U	0.2 U	0.16 U	0.14 U
VI-15	SI-IA-15-1	Indoor Air	**0.068 J**	**0.21**	0.16 U	0.2 U	0.16 U	0.14 U
VI-16	SI-IA-16-1	Indoor Air	**0.2 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-17	SI-IA-17-1	Indoor Air	**0.41**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-18	SI-IA-18-1	Indoor Air	**7.3**	**0.75**	0.16 U	0.2 U	0.16 U	0.14 U
VI-20	SI-IA-20-1	Indoor Air	**0.068 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-21	SI-IA-21-1	Indoor Air	**0.27**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-22	SI-IA-22-1	Indoor Air	**0.14 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-23	SI-IA-23-1	Indoor Air	0.54 U	0.42 U	0.31 U	0.41 U	0.31 U	0.28 U
VI-24	SI-IA-24-1	Indoor Air	**0.14 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-26	SI-IA-26-1	Indoor Air	0.27 U	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-26	SI-IA-900-2	Indoor Air	0.27 U	**0.11 J**	0.16 U	0.2 U	0.16 U	0.14 U
VI-27	SI-IA-27-1	Indoor Air	**0.068 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-28	SI-IA-28-1	Indoor Air	**0.27**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-29	SI-IA-29-1	Indoor Air	**2.5**	0.21 U	**0.12 J**	0.2 U	0.16 U	0.14 U
VI-29	SI-IA-29-2	Indoor Air	**0.41**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-30	SI-IA-30-1	Indoor Air	**0.2 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-30	SI-IA-30-2	Indoor Air	**0.34**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-31	SI-EQP-IA-1	Indoor Air	**0.75**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-31	SI-EQP-IA-2	Indoor Air	**1.6**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-31	SI-EQP-IA-3	Indoor Air	**0.27**	**0.64**	0.16 U	0.2 U	0.16 U	0.14 U
VI-31	SI-EQP-IA-4	Indoor Air	**0.27**	**0.054 J**	0.16 U	0.2 U	0.16 U	0.14 U
VI-31	SI-EQP-IA-6	Indoor Air	**16**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-31	SI-EQP-IA-7	Indoor Air	**19**	0.21 U	0.16 U	0.2 U	0.16 U	**0.11 J**
VI-32	SI-CRPDC-IA-32-1	Indoor Air	**1.8**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-32	SI-CRPDC-IA-32-2	Indoor Air	**1.7**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-33	SI-IA-33-1	Indoor Air	**0.41**	0.21 U	0.16 U	0.2 U	**0.079 J**	0.14 U
VI-33	SI-IA-33-2	Indoor Air	**0.068 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-34	SI-IA-34-1	Indoor Air	**0.14 J**	**0.11 J**	0.16 U	0.2 U	0.16 U	0.14 U
VI-AA-1	SI-EQP-AA-1	Ambient Air	**0.14 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-AA-2	SI-AA-2-1	Ambient Air	**4.4**	**0.43**	0.16 U	0.2 U	0.16 U	0.14 U
VI-AA-3	SI-AA-3-1	Ambient Air	**0.27**	**0.11 J**	0.16 U	0.2 U	0.16 U	0.14 U
VI-AA-4	SI-AA-4-1	Ambient Air	**0.54**	**0.16 J**	**0.28**	0.2 U	0.16 U	0.14 U

Abbreviations: **Compound detected**
PCE - tetrachloroethene **Compound exceeds one or both of its screening criteria**
TCE - trichloroethene NL - not listed
DCE - dichloroethene µg/m^3 - microgram per cubic meter
U - not detected ID - identification
J - estimated concentration

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Table 2
Subslab Sample Results
Cabo Rojo Groundwater
Contamination Site Cabo Rojo,
Puerto Rico

Location	Sample ID	Sample Type	PCE	TCE	cis-1,2-DCE	Vinyl Chloride	1,1-DCE	1,4-Dioxane
Subslab Screening Criteria (µg/m^3)		Residential	359.96	15.95	NL	5.59	6952.38	18.72
		Commercial	1572.31	99.71	NL	92.91	29200.00	81.76
VI-2	SI-SS-2-1	Subslab	**9.2**	**0.38 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-3	SI-SS-3-1	Subslab	**7.1**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-4	SI-SS-4-1	Subslab	**0.41 J**	**0.86 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-5	SI-SS-5-1	Subslab	68 U	54 U	40 U	26 U	40 U	90 U
VI-6	SI-SS-6-1	Subslab	**53**	**0.16 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-7	SI-SS-7-1	Subslab	68 U	54 U	40 U	26 U	40 U	90 U
VI-8	SI-SS-8-1	Subslab	**7**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-10	SI-SS-10-1	Subslab	**1.8**	1.1 U	0.79 U	0.51 U	0.79 U	**0.36 J**
VI-11	SI-SS-11-1	Subslab	**0.68 J**	**3.4**	0.79 U	0.51 U	0.79 U	1.8 U
VI-12	SI-SS-12-1	Subslab	**77**	**0.48 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-13	SI-SS-13-1	Subslab	**1,000**	**3.3**	0.79 U	0.51 U	0.79 U	1.8 U
VI-14	SI-SS-14-1	Subslab	**67**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-15	SI-SS-15-1	Subslab	**90**	**0.21 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-16	SI-SS-16-1	Subslab	**26**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-17	SI-SS-17-1	Subslab	**9.7**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-18	SI-SS-18-1	Subslab	**9.5 J**	21 U	16 U	10 U	16 U	36 U
VI-20	SI-SS-20-1	Subslab	**0.54 J**	**0.16 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-21	SI-SS-21-1	Subslab	**1.2 J**	1.1 U	0.79 U	0.51 U	0.79 U	**0.32 J**
VI-22	SI-SS-22-1	Subslab	**0.47 J**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-23	SI-SS-23-1	Subslab	**7.5**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-24	SI-SS-24-1	Subslab	**6**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-26	SI-SS-26-1	Subslab	**15**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-27	SI-SS-27-1	Subslab	**0.61 J**	**0.11 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-28	SI-SS-28-1	Subslab	**1 J**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-29	SI-SS-29-1	Subslab	**340**	**0.81 J**	4 U	2.6 U	4 U	9 U
VI-29	SI-SS-29-2	Subslab	**4.7 J**	**7 J**	**2.8 J**	5.1 UJ	7.9 UJ	18 U
VI-29	SI-SS-29-3	Subslab	**1400**	**4.8 J**	7.9 U	5.1 UJ	7.9 UJ	18 U
VI-30	SI-SS-30-1	Subslab	**0.27 J**	1.1 U	0.79 U	0.51 U	0.79 U	**0.65 J**
VI-30	SI-SS-30-2	Subslab	**2**	1.1 U	0.79 U	0.51 U	0.79 U	**0.79 J**
VI-31	SI-EQP-SS-1	Subslab	**2,900**	**11 J**	40 U	26 U	40 U	90 U
VI-31	SI-EQP-SS-2	Subslab	**2,600**	**0.64 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-31	SI-EQP-SS-3	Subslab	**2,300**	**0.54 J**	0.79 U	0.51 U	0.79 U	**0.18 J**
VI-31	SI-EQP-SS-4	Subslab	**6,600**	**1.2**	0.79 U	0.51 U	0.79 U	1.8 U
VI-31	SI-EQP-SS-5	Subslab	**1,500**	**3.7**	0.79 U	0.51 U	0.79 U	1.8 U
VI-31	SI-EQP-SS-6	Subslab	**9,400**	**110 J**	**0.36 J**	0.51 U	0.79 U	1.8 U
VI-31	SI-EQP-SS-7	Subslab	**9,000**	**7.6**	0.79 U	0.51 U	0.79 U	**0.43 J**
VI-32	SI-CRPDC-SS-32-1	Subslab	**240,000**	**83**	40 U	26 U	40 U	90 U
VI-32	SI-CRPDC-SS-32-2	Subslab	**40,000**	**40 J**	40 U	26 U	40 U	90 U
VI-32	SI-CRPDC-SS-32-3	Subslab	**8,800**	**32 J**	40 U	26 U	40 U	90 U
VI-32	SI-CRPDC-SS-32-4	Subslab	**600**	11 U	7.9 U	5.1 U	7.9 U	18 U
VI-33	SI-SS-33-1	Subslab	**15**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-33	SI-SS-33-2	Subslab	**97**	1.1 U	0.79 U	0.51 U	0.79 U	**3.6**
VI-34	SI-SS-34-1	Subslab	**250**	**0.21 J**	0.79 U	0.51 U	0.79 U	**0.14 J**

Abbreviations: **Compound detected**
PCE - tetrachloroethene **Compound exceeds one or both of its screening criteria**
TCE - trichloroethene NL - not listed
DCE - dichloroethene µg/m^3 - microgram per cubic meter
U - not detected ID - identification
J - estimated concentration

Report Prepared on August 2023

Table 3
Summary of Chemicals of Concern and
Medium-Specific Exposure Point Concentrations

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point[2]	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)[1]	EPC Units	Statistical Measure
		Minimum	Maximum					
Tap Water - Plume 1	cis-1,2-dichloroethylene	1.5	410	µg/l	12 / 12	377	µg/l	99% Chebyshev (Mean, Sd) UCL
	Tetrachloroethylene	1.2	530	µg/l	12 / 12	248	µg/l	95% Chebyshev (Mean, Sd) UCL
	Trichloroethylene	0.79	140	µg/l	12 / 12	65	µg/l	95% Chebyshev (Mean, Sd) UCL
	Vinyl chloride	0.023 (J)	65	µg/l	8 / 12	61	µg/l	99% KM (Chebyshev) UCL

Footnotes:
(1) 95% UCLs were calculated using ProUCL version 5.1 for constituent data sets with a sample size greater than or equal to 10 samples and 5 or more detects.
(2) Although risks were quantitatively evaluated for Plume 2 receptors, the resulting risks were within or below the target risk range ($1x10^{-6}$ to $1x10^{-4}$) and below the noncancer hazard index threshold of 1. However, 1,1-dichloroethene is also considered a chemical of concern since it was detected above the Puerto Rico Water Quality Standard and Federal MCL (7 µg/L) in this exposure area.

Definitions:
EPC = exposure point concentration
J = estimated value (qualifier)
UCL = upper confidence limit
µg/l = microgram per liter

Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

This table presents the chemicals of concern (COCs) along with exposure point concentrations (EPCs) for each of the COCs detected in site media (*i.e.*, the concentration used to estimate the exposure and risk from each COC). The table includes the range of concentrations detected for each COC, as well as the frequency of detection (*i.e.,* the number of times the chemical was detected in the samples collected at the site), the EPC and how it was derived.

Table 4
Selection of Exposure Pathways

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor (Age)	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/ Future	Soil	Surface Soil	EQP, CRPDC, DEFDC, Serrano II, PRIDCO East, PRIDCO West	Worker	Adult	Dermal	None	Workers may contact surface soil through incidental ingestion, dermal contact, and inhalation of particulates and/or volatiles while working at the site. Concentrations detected in surface soil were below risk-based screening criteria.
						Ingestion	None	
						Inhalation	None	
				Trespassers	Adolescent (12 to <18 yrs)	Dermal	None	Trespassers may contact surface soil through incidental ingestion, dermal contact, and inhalation of particulates and/or volatiles while working at the site. Concentrations detected in surface soil were below risk-based screening criteria.
						Ingestion	None	
						Inhalation	None	
	Surface Water	Surface Water	Drainage Ways	Recreational User	Adolescent (12 to <18 yrs)	Dermal	None	Recreational users may contact surface water through incidental ingestion and dermal contact. Concentrations detected in surface water were, however, below risk-based screening criteria.
						Ingestion	None	
	Sediment	Sediment	Drainage Ways	Recreational User	Adolescent (12 to <18 yrs)	Dermal	None	Recreational users may contact sediment through incidental ingestion and dermal contact. Concentrations detected in sediment were, however, below risk-based screening criteria.
						Ingestion	None	
	Groundwater	Indoor Air	Indoor Air	Worker	Adult	Inhalation	Qualitative	Workers may be exposed to contaminants in indoor air via vapor intrusion. Indoor air and sub-slab concentrations were screened against commercial vapor intrusion screening levels in the risk assessment.
Future	Groundwater	Groundwater[1]	Tap Water	Resident	Adult and Child (birth to <6 yrs)	Dermal	Quantitative	Residents are currently using groundwater from the public water supply for all their household needs. If wells are installed within the plume(s) of site contamination, or if the public water treatment systems fail or are otherwise bypassed, residents may be exposed to contaminants in groundwater used as tapwater.
						Ingestion	Quantitative	
						Inhalation	Quantitative	
				Worker	Adult	Ingestion	Quantitative	Businesses are currently using groundwater from the public water supply. If wells are installed within the plume(s) of site contamination, or if the public water treatment systems fail or are otherwise bypassed, workers may be exposed to contaminants in groundwater used as tapwater at work.
		Indoor Air	Indoor Air	Resident	Adult and Child (birth to <6 yrs)	Inhalation	Qualitative	If commercial properties are redeveloped for residential use, residents may be exposed to contaminants in indoor air via vapor intrusion. Current sub-slab and indoor air concentrations were screened against residential vapor intrusion screening levels in the risk assessment.
	Soil	Surface and Subsurface Soil	EQP, CRPDC, DEFDC, Serrano II, PRIDCO East, PRIDCO West	Construction Worker	Adult	Dermal	None	If construction occurs in the future, construction workers may contact surface and subsurface soil while working at the site. Concentrations detected in soil were, however, below risk-based screening criteria.
						Ingestion	None	
						Inhalation	None	
		Surface Soil	EQP, CRPDC, DEFPDC, Serrano II, PRIDCO East, PRIDCO West	Resident	Adult and Child (birth to <6 yrs)	Dermal	None	If commercial properties are redeveloped for residential use, residents may contact surface soil through incidental ingestion, dermal contact, and inhalation of airborne particulates while at their residence. Concentrations detected in surface soil were, however, below risk-based screening criteria.
						Ingestion	None	
						Inhalation	None	

Footnotes:
(1) Two plumes of contamination were identified at the Site. Exposures and risks were estimated separately for each plume assuming future supply wells may be installed within the core of each plume.

Definitions:
EQP = Extasy Q Prints
CRPDC = Cabo Rojo Professional Dry Cleaners
PRIDCO = Puerto Rico Industrial Development Company
DEFDC = D'Elegant Fantastic Dry Cleaners

Summary of Selection of Exposure Pathways

This table describes the exposure pathways associated with the varying media (soil, sediment, surface water and groundwater) that were evaluated in the risk assessment along with the rationale for the inclusion or exclusion of each pathway. Exposure media, exposure points, and characteristics of receptor populations are also included.

Table 5
Non-Carcinogenic Toxicity Data Summary

Pathway: Ingestion/Dermal

Chemicals of Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Absorp. Efficiency (Dermal)[1]	Adjusted RfD (Dermal)	Adjusted Dermal RfD Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD Target Organ	Dates of RfD[2]
cis-1,2-dichloroethylene	Chronic	0.002	mg/kg-day	1	0.002	mg/kg-day	Kidney	3,000	IRIS	12/15/2017
Tetrachloroethylene	Chronic	0.006	mg/kg-day	1	0.006	mg/kg-day	Neurological/Liver/ Kidney	1,000	IRIS	12/15/2017
Trichloroethylene	Chronic	0.0005	mg/kg-day	1	0.0005	mg/kg-day	Heart/Immunological/ Developmental/Kidney	10 to 1,000	IRIS	12/15/2017
Vinyl chloride	Chronic	0.003	mg/kg-day	1	0.003	mg/kg-day	Liver	30	IRIS	12/15/2017

Pathway: Inhalation

Chemicals of Concern	Chronic/ Subchronic	Inhalation RfC	Inhalation RfC Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfC Target Organ	Dates of RfC[2]
cis-1,2-dichloroethylene	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	Chronic	0.04	mg/m^3	Neurological/Liver/Kidney	1,000	IRIS	12/15/2017
Trichloroethylene	Chronic	0.002	mg/m^3	Heart/Immunological/Liver	10 to 100	IRIS	12/15/2017
Vinyl chloride	Chronic	0.1	mg/m^3	Liver	30	IRIS	12/15/2017

Footnotes:
(1) Source: Risk Assessments Guidance for Superfund. Volume 1: Human Health Evaluation Manual (Part E). Section 4.2 and Exhibit 4-1.
(2) Dates reflect when the source was searched and not the publication date.

Definitions:
IRIS = Integrated Risk Information System
mg/kg-day = milligram per kilogram per day
mg/m^3 = milligram per cubic meter
NA = not available
RfC = reference concentration
RfD = reference dose

Summary of Toxicity Assessment

This table provides noncarcinogenic risk information relevant to the contaminants of concern at the Site. Toxicity data are provided for the ingestion, dermal and inhalation routes of exposure.

Table 6
Cancer Toxicity Data Summary

Pathway: Ingestion/ Dermal

Chemical of Concern	Oral Cancer Slope Factor	Units	Adjusted Cancer Slope Factor (for Dermal)	Slope Factor Units	Weight of Evidence/Cancer Guideline[1]	Source	Date[2]
cis-1,2-dichloroethylene	NA	NA	NA	NA	Inadequate information to assess carcinogenic potential	IRIS	12/15/2017
Tetrachloroethylene	2.1E-03	$(mg/kg\text{-}day)^{-1}$	2.1E-03	$(mg/kg\text{-}day)^{-1}$	likely to be carcinogenic to humans	IRIS	12/15/2017
Trichloroethylene[3]	4.6E-02	$(mg/kg\text{-}day)^{-1}$	4.6E-02	$(mg/kg\text{-}day)^{-1}$	carcinogenic to humans	IRIS	12/15/2017
Vinyl chloride	7.2E-01	$(mg/kg\text{-}day)^{-1}$	7.2E-01	$(mg/kg\text{-}day)^{-1}$	A	IRIS	12/15/2017

Pathway: Inhalation

Chemical of Concern	Unit Risk	Units	Inhalation Cancer Slope Factor	Slope Factor Units	Weight of Evidence/Cancer Guideline[1]	Source	Date[2]
cis-1,2-dichloroethylene	NA	NA	NA	NA	Inadequate information to assess carcinogenic potential	NA	NA
Tetrachloroethylene	2.60E-07	$(mg/kg\text{-}day)^{-1}$	NA	NA	likely to be carcinogenic to humans	IRIS	12/15/2017
Trichloroethylene[4]	4.10E-06	$(mg/kg\text{-}day)^{-1}$	NA	NA	carcinogenic to humans	IRIS	12/15/2017
Vinyl chloride	4.4E-06	$(mg/kg\text{-}day)^{-1}$	NA	NA	A	IRIS	12/15/2017

Footnotes:
(1) Weight of evidence information obtained from IRIS. Categories are as follows:
A=Known human carcinogen
B2=Probable human carcinogen based on sufficient evidence of carcinogenicity in animals
C=Possible human carcinogen
D=Not classifiable due to lack of animal bioassays and human studies
(2) Dates reflect when the source was searched and not the publication date.
(3) The slope factor is adult-based. TCE is carcinogenic by a mutagenic mode of action for induction of kidney tumors. The kidney lifetime oral slope factor is $9.3x10^{-3}$ per mg/kg-day.
(4) The inhalation unit risk is adult-based. TCE is carcinogenic by a mutagenic mode of action for induction of kidney tumors. The kidney lifetime unit risk is $1.0x10^{-6}$ per $\mu g/m^3$.

Definitions:
IRIS = Integrated Risk Information System
IUR = inhalation unit risk
NA = not available
(mg/kg-day)-1 = per milligrams per kilogram per day
$(\mu g/m^3)^{-1}$ = per micrograms per cubic meter

Summary of Toxicity Assessment

This table provides carcinogenic risk information relevant to the contaminants of concern at the Site. Toxicity data are provided for the ingestion, dermal and inhalation routes of exposure.

Table 7
Risk Characterization Summary - Non-Carcinogens

Scenario Timeframe: Future
Receptor Population: Resident (Plume 1)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical Of Concern	Primary Target Organ(s)	Non-Carcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater[2]	Groundwater	Tap Water	cis-1,2-dichloroethylene	Kidney	9.4	NA	NA	9.4
			Tetrachloroethylene	Neurological/Liver/ Kidney	2.1	1.2	3.7	6.9
			Trichloroethylene	Heart/Immunological/ Developmental/Kidney/Liver	6.5	1.1	2.3	27.9
			Vinyl chloride	Liver	1.0	0.1	0.4	1.5
							Groundwater Hazard Index Total[1]=	**48**
							Receptor Hazard Index[1]=	**48**
							Neurological HI =	**7**
							Developmental HI =	**28**
							Heart HI =	**28**
							Immune System HI =	**28**
							Kidney HI =	**44**
							Liver HI =	**36**
							Lung HI =	**1**

Scenario Timeframe: Future
Receptor Population: Worker (Plume 1)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical Of Concern	Primary Target Organ(s)	Non-Carcinogenic Hazard Quotient	
					Ingestion	Exposure Routes Total
Groundwater[2]	Groundwater	Tap Water	cis-1,2-dichloroethylene	Kidney	4	4
			Trichloroethylene	Heart/Immunological/ Developmental/Kidney/Liver	2.8	2.8
					Groundwater Hazard Index Total[1]=	**9**
					Receptor Hazard Index[1]=	**9**
					Neurological HI =	**1**
					Developmental HI =	**3**
					Heart HI =	**3**
					Immune System HI =	**3**
					Kidney HI =	**8**
					Liver HI =	**4**

Footnotes:
(1) The HI represents the summed HQs for all chemicals of potential concern at the site, not just those requiring remedial action (i.e., the chemicals of concern [COCs]) which are shown in this table.
(2) Noncarcinogenic hazards were also evaluated for the resident and worker within Plume 2, however, the resulting hazards were below the target HI of 1. 1,1-Dichloroethene is still considered a COC since it was detected above the Puerto Rico Water Quality Standard and Federal MCL (7 µg/L).

Definitions:
HI = Hazard Index
HQ = Hazard Quotient
MCL = Maximum Contaminant Level
NA = not available
µg/L = microgram per liter

Table 8
Risk Characterization Summary - Carcinogens

Scenario Timeframe: Future
Receptor Population: Resident (Plume 1)
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemical Of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater[2]	Groundwater	Tap Water	Trichloroethylene	6.E-05	9.E-06	1.E-04	2.E-04
			Vinyl chloride	3.E-03	1.E-04	9.E-03	1.E-02
						Exposure Medium Total=	**1.E-02**
						Total Risk[1]=	**1.E-02**

Scenario Timeframe: Future
Receptor Population: Worker (Plume 1)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical Of Concern	Carcinogenic Risk	
				Ingestion	Exposure Routes Total
Groundwater[2]	Groundwater	Tap Water	Vinyl chloride	3.E-04	3.E-04
				Exposure Medium Total=	**4.E-04**
				Total Risk[1]=	**4.E-04**

Footnotes:
(1) Total Risk values represent cumulative estimates from exposure to all chemicals of potential concern at the site, not just those requiring remedial action (*i.e.,* the chemicals of concern [COCs]) which are shown in this table.
(2) Cancer risks were also evaluated for the resident and worker within Plume 2, however, the resulting risks were below or within the target risk range. 1,1-Dichloroethene is still considered a COC since it was detected above the Puerto Rico Water Quality Standard and Federal MCL (7 µg/L).

Definitions:
MCL = Maximum Contaminant Level
NA = not available
µg/L = microgram per liter

Table 9
Risk Screening Summary - Vapor Intrusion

Chemical of Concern[1]	Unit	Sub-slab Vapor VISL[2]	Indoor Air VISL[2]	Sub-slab Vapor Results[3]	Indoor Air Results[3]
cis-1,2-dichloroethylene[4]	µg/m^3	NL	NL	2.8 (J)	0.28
Tetrachloroethylene	µg/m^3	1,572	47	240,000	19
Trichloroethylene	µg/m^3	100	3	110 (J)	3.4
Vinyl chloride	µg/m^3	93	2.8	ND	ND
1,1-dichloroethene	µg/m^3	29,200	876	ND	0.07 (J)

Footnotes:
(1) Although results of the data collected indicate that elevated sub-slab vapor and indoor air concentrations were primarily associated with tetrachloroethylene and trichloroethylene, results for each of the chemicals of concern in groundwater are presented.
(2) Since elevated sub-slab vapor and indoor air concentrations were predominantly observed at the CRPDC and EQP source areas, the EPA Vapor Intrusion Screening Levels for sub-slab and indoor air displayed are based on future commercial exposure at a target risk of $1x10^{-6}$ for carcinogens and a target hazard quotient of 1 for noncarcinogens, as calculated using the online EPA VISL calculator.
(3) Sub-slab and indoor air samples were collected by EPA in 2012, 2013 and 2017. The results presented include the maximum detections identified from the most recent round of sampling.
(4) No VISLs have been established for cis-1,2-dichloroethylene in sub-slab vapor or indoor air.

Definitions:
CRPDC = Cabo Rojo Professional Dry Cleaners
EPA = Environmental Protection Agency
EQP = Extasy Q Prints
J = estimated value (qualifier)
ND = not detected in any sample above the reporting limit
NL = not listed
µg/m^3 = microgram per cubic meter
VISL = Vapor Intrusion Screening Level

Table 10, Remediation Goals for Soil

Contaminant of Concern	Soil Protective of Groundwater	PRG	Maximum Detected Concentration
	µg/kg	µg/kg	µg/kg
cis-1,2-DCE	417	417	480J
PCE	132	132	3,700
TCE	141	141	35J

J - Estimated result

Table 11, Remediation Goals for Groundwater

Contaminant of Concern	EPA MCLs (µg/L)	PR Water Quality Standard (µg/L)	PRG (µg/L)	MDC Plume 1 (µg/L)	MDC Plume 2 (µg/L)
1,1-DCE	7	7	7	0.54	40
cis-1,2-DCE	70	NL	70	93	0.27J
PCE	5	5	5	96	ND
TCE	5	5	5	35	0.79
Vinyl chloride	2	0.25	0.25	0.28	0.28

ND - Not detected
NL - Not Listed
MCL - Maximum Contaminant Levels
MDC - Maximum Detected Concentration

Table 12 - Screening Levels for Vapor Intrusion		
Contaminant of Concern	**Commercial Screening Level**	**Maximum Detected Concentrations**
	µg/m³	**µg/m³**
Sub-Slab		
1,1-DCE	29,200	ND
Vinyl chloride	93	ND
Cis 1,2-DCE	NL	2.8J
PCE	1,572	240,000
TCE	100	110J
Indoor Air		
1,1-DCE	876	0.079J
Vinyl chloride	2.8	ND
Cis-1,2-DCE	NL	0.28
PCE	47	19
TCE	3	3.4

Table 13
Cost Estimate Summary
Selected Remedy
Cabo Rojo Groundwater
Contamination Site
Cabo Rojo, Puerto Rico

	Description	Cost
CAPITAL COSTS		
1	General Requirements	$738,000
2&3	DPE System Construction and Startup	$957,000
4	First Year DPE Operation and Maintenance	$354,000
	Subtotal	*$2,049,000*
	Contingency 20%	$410,000
	Subtotal	*$2,459,000*
	Administrative	$330,000
	Total Remedial Action Capital Costs	**$2,789,000**
OPERATION AND MAINTENANCE COSTS		
5	Annual O&M for DPE System Operating Intermittently	$279,000
	Present worth of O&M Years 2-5 Operation	$884,000
6	Present worth of DPE Performance Evaluation (Year 5)	$63,000
7	Annual Monitoring Cost for Plume #1 and Plume #2	$126,000
	Present worth of Monitoring (30 Years)	$1,564,000
PRESENT WORTH		
	Total Capital Cost	$2,789,000
	Total O&M Cost	$2,511,000
	Total Present Worth	**$5,300,000**

Note: The project cost presented above represent a Feasibility Study-level estimate. Costs are subject to change pending the results of the pre-design investigation. Expected accuracy range of the cost estimate is -30% to +50%. Present worth calculation assumes 7% discount rate after inflation is considered.

Table 14
Chemical-specific ARARs, TBCs, Other Criteria, and Guidance
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Regulatory Level	Name	Synopsis
Federal	EPA Regional Screening Levels (RSLs) (November 2017)	Establishes risk-based screening levels for the protection of human health.
Federal	National Primary Drinking Water Standards (40 CFR Part 141), Maximum Contaminant Levels (MCLs)	Establishes health-based standards for public drinking water systems. Also establishes drinking water quality goals set at levels at which no adverse health effects are anticipated, with an adequate margin of safety. Groundwater at the site is currently not used as a source of drinking water.
Federal	Clean Water Act, Ambient Water Quality Criteria (40 CFR Part 131)	Sets criteria for water quality based on protection of human health and protection of aquatic life.
Federal	OSWER Vapor Intrusion Assessment: Vapor Intrusion Screening Level (VISL) Calculator Version 3.0, November 2012 RSLs	Along with RSLs, provides screening values that can be used to address vapor intrusion concerns using groundwater, soil gas (exterior to buildings and sub-slab), and indoor air concentrations.
Commonwealth of Puerto Rico	Puerto Rico Water Quality Standards (PRWQS) Regulation, August 2014	This regulation exists to preserve, maintain and enhance the quality of the waters of Puerto Rico and regulate any discharge of any pollutant to the waters of Puerto Rico by establishing water quality standards. Water quality standards and use classifications are promulgated for the protection of the uses assigned to coastal, surface, estuarine, wetlands, and ground waters of Puerto Rico.

ARARs - Applicable or relevant and Appropriate Requirements
TBC- To be Considered Criteria
CFR - Code of Federal Regulations
PRGs - Preliminary Remediation Goals
OSWER - Office of Solid Waste and Emergency Response
MCLs - Maximum Contaminant Levels

Table 15
Location-specific ARARs, TBCs, Other Criteria, and Guidance
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Regulatory Level	Name	Synopsis
Federal	National Historic Preservation Act Regulations (36 C.F.R. Part 800)	This requirement establishes procedures to provide for preservation of historical and archeological data that might be destroyed through alteration of terrain as a result of a federal construction project or a federally licensed activity or program.

ARARs - Applicable or relevant and Appropriate Requirements
TBC- To be Considered Criteria
CFR - Code of Federal Regulations
PRGs - Preliminary Remediation Goals
OSWER - Office of Solid Waste and Emergency Response
MCLs - Maximum Contaminant Levels

Table 16
Action-specific ARARs, TBCs, Other Criteria, and Guidance
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Regulatory Level	Name	Synopsis
Federal	OSHA Recording and Reporting Occupational Injuries and Illnesses (29 CFR 1904)	This regulation outlines the record keeping and reporting requirements for an employer under OSHA.
Federal	OSHA Occupational Safety and Health Standards (29 CFR Part 1910)	These regulations specify an 8-hour time- weighted average concentration for worker exposure to various organic compounds. Training requirements for workers at hazardous waste operations are specified in 29 CFR 1910.120.
Federal	OSHA Safety and Health Regulations for Construction (29 CFR Part 1926)	This regulation specifies the type of safety equipment and procedures to be followed during site remediation.
Federal	RCRA Identification and Listing of Hazardous Wastes (40 CFR Part 261)	This regulation describes methods for identifying hazardous wastes and lists known hazardous wastes.
Federal	RCRA Standards Applicable to Generators of Hazardous Wastes (40 CFR Part 262)	Describes standards applicable to generators of hazardous wastes.
Federal	RCRA Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities – General Facility Standards (40 CFR Parts 264.10–264.19)	This regulation lists general facility requirements including general waste analysis, security measures, inspections, and training requirements.
Commonwealth of Puerto Rico	Regulation of the Puerto Rico Environmental Quality Board (PREQB) for the Prevention and Control of Noise Pollution	This standard provides the standards and requirements for noise control.
Commonwealth of Puerto Rico	Puerto Rico's Anti-degradation Policy set forth in Puerto Rico's Water Quality Standards	Conserve, maintain and protect the designated and existing uses of the waters of Puerto Rico. The water quality necessary to protect existing uses, including threatened and endangered species shall be maintained and protected.

ARARs - Applicable or relevant and Appropriate Requirements
TBC- To be Considered Criteria
CFR - Code of Federal Regulations
PRGs - Preliminary Remediation Goals
OSWER - Office of Solid Waste and Emergency Response
MCLs - Maximum Contaminant Levels

Table 16 (continued)
Action-specific ARARs, TBC, Other Criteria, and Guidance
Cabo Rojo Groudwater Contamination Site
Cabo Rojo, Puerto Rico

Regulatory Level	Name	Synopsis
General - Site Remediation		
Federal	Department of Transportation (DOT) Rules for Transportation of Hazardous Materials (49 CFR Parts 107, 171, 172, 177 to 179)	This regulation outlines procedures for the packaging, labeling, manifesting, and transporting hazardous materials.
Federal	RCRA Standards Applicable to Transporters of Hazardous Waste (40 CFR Part 263)	Establishes standards for hazardous waste transporters.
Federal	RCRA Land Disposal Restrictions (40 CFR Part 268)	This regulation identifies hazardous wastes restricted for land disposal and provides treatment standards for land disposal.
Federal	RCRA Hazardous Waste Permit Program (40 CFR Part 270)	This regulation establishes provisions covering basic EPA permitting requirements.
Commonwealth of Puerto Rico	PREQB Regulation for the Control of Non-Hazardous Solid Waste (November 1997)	This regulation establishes standards for the generation, management, transportation, recovery, disposal and management of non- hazardous solid waste.
Commonwealth of Puerto Rico	PREQB Regulation for the Control of Hazardous Solid Waste (September 1998)	This regulation establishes standards for management and disposal of hazardous wastes.

ARARs - Applicable or relevant and Appropriate Requirements
TBC- To be Considered Criteria
CFR - Code of Federal Regulations
PRGs - Preliminary Remediation Goals
OSWER - Office of Solid Waste and Emergency Response
MCLs - Maximum Contaminant Levels

Table 16 (continued)
Action-specific ARARs, TBCs, Other Criteria, and Guidance
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Regulatory Level	Name	Synopsis
Federal	National Pollutant Discharge Elimination System (NPDES) (40 CFR Parts 100, *et seq*.)	NPDES permit requirements for point source discharges must be met, including the NPDES Best Management Practice (BMP) Program. These regulations include, but are not limited to, requirements for compliance with water quality standards, a discharge monitoring system, and records maintenance.
Federal	Safe Drinking Water Act – Underground Injection Control (UIC) Program (40 CFR Parts 144 and 146)	Establish performance standards, well requirements, and permitting requirements for groundwater re-injection wells.
Commonwealth of Puerto Rico	Puerto Rico Water Quality Standards (PRWQS) Regulation, August 2014	This regulation is to preserve, maintain and enhance the quality of the waters of Puerto Rico and regulate any discharge of any pollutant to the waters of Puerto Rico by establishing water quality standards. Water quality standards and use classifications are promulgated for the protection of the uses assigned to coastal, surface, estuarine, wetlands, and ground waters of Puerto Rico.

ARARs - Applicable or relevant and Appropriate Requirements
TBC- To be Considered Criteria
CFR - Code of Federal Regulations
PRGs - Preliminary Remediation Goals
OSWER - Office of Solid Waste and Emergency Response
MCLs - Maximum Contaminant Levels

Table 16 (continued)
Action-specific ARARs, TBCs, Other Criteria, and Guidance
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Regulatory Level	ARARs	Synopsis
Federal	Clean Air Act (CAA)—National Ambient Air Quality Standards (NAAQs) (40 CFR Part 50-52, 60, and 40)	These provide air quality standards for particulate matter, lead, NO_2, SO_2, CO, and volatile organic matter.
Federal	Standards of Performance for New Stationary Sources (40 CFR Part 60)	Set the general requirements for air quality.
Federal	National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)	These provide air quality standards for hazardous air pollutants.
Federal	Federal Directive - Control of Air Emissions from Superfund Air Strippers (OSWER Directive 9355.0-28)	Provides guidance on control of air emissions from air strippers used at Superfund Sites for groundwater treatment.
Commonwealth of Puerto Rico	PREQB Regulation for the Control of Atmospheric Pollution (2012)	Describes requirements and procedures for obtaining air permits and certificates; rules that govern the emission of contaminants into the ambient atmosphere.

ARARs - Applicable or relevant and Appropriate Requirements
TBC- To be Considered Criteria
CFR - Code of Federal Regulations
PRGs - Preliminary Remediation Goals
OSWER - Office of Solid Waste and Emergency Response
MCLs - Maximum Contaminant Levels

APPENDIX II

Tables

Table 1
Indoor Air Sample Results
Cabo Rojo Groundwater
Contamination Site Cabo Rojo,
Puerto Rico

Location	Sample ID	Sample Type	PCE	TCE	cis-1,2-DCE	Vinyl Chloride	1,1-DCE	1,4-Dioxane
Indoor Air Screening Criteria (µg/m³)		Residential	10.80	0.48	NL	0.17	208.57	0.56
		Commercial	47.17	2.99	NL	2.79	876.00	2.45
VI-2	SI-IA-2-1	Indoor Air	**0.14 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-3	SI-IA-3-1	Indoor Air	**0.14 J**	**0.27**	0.16 U	0.2 U	0.16 U	0.14 U
VI-4	SI-IA-4-1	Indoor Air	0.27 U	**0.27**	0.16 U	0.2 U	0.16 U	0.14 U
VI-5	SI-IA-5-1	Indoor Air	**0.61**	**0.11 J**	**0.12 J**	0.2 U	0.16 U	0.14 U
VI-7	SI-IA-7-1	Indoor Air	**0.68**	**0.16 J**	0.16 U	0.2 U	0.16 U	0.14 U
VI-8	SI-IA-8-1	Indoor Air	**0.068 J**	**3.4**	0.16 U	0.2 U	0.16 U	0.14 U
VI-10	SI-IA-10-1	Indoor Air	**0.068 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-11	SI-IA-11-1	Indoor Air	0.27 U	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-12	SI-IA-12-1	Indoor Air	**0.54**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-13	SI-IA-13-1	Indoor Air	0.27 U	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-14	SI-IA-14-1	Indoor Air	**1.2**	**0.054 J**	0.16 U	0.2 U	0.16 U	0.14 U
VI-15	SI-IA-15-1	Indoor Air	**0.068 J**	**0.21**	0.16 U	0.2 U	0.16 U	0.14 U
VI-16	SI-IA-16-1	Indoor Air	**0.2 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-17	SI-IA-17-1	Indoor Air	**0.41**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-18	SI-IA-18-1	Indoor Air	**7.3**	**0.75**	0.16 U	0.2 U	0.16 U	0.14 U
VI-20	SI-IA-20-1	Indoor Air	**0.068 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-21	SI-IA-21-1	Indoor Air	**0.27**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-22	SI-IA-22-1	Indoor Air	**0.14 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-23	SI-IA-23-1	Indoor Air	0.54 U	0.42 U	0.31 U	0.41 U	0.31 U	0.28 U
VI-24	SI-IA-24-1	Indoor Air	**0.14 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-26	SI-IA-26-1	Indoor Air	0.27 U	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-26	SI-IA-900-2	Indoor Air	0.27 U	**0.11 J**	0.16 U	0.2 U	0.16 U	0.14 U
VI-27	SI-IA-27-1	Indoor Air	**0.068 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-28	SI-IA-28-1	Indoor Air	**0.27**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-29	SI-IA-29-1	Indoor Air	**2.5**	0.21 U	**0.12 J**	0.2 U	0.16 U	0.14 U
VI-29	SI-IA-29-2	Indoor Air	**0.41**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-30	SI-IA-30-1	Indoor Air	**0.2 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-30	SI-IA-30-2	Indoor Air	**0.34**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-31	SI-EQP-IA-1	Indoor Air	**0.75**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-31	SI-EQP-IA-2	Indoor Air	**1.6**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-31	SI-EQP-IA-3	Indoor Air	**0.27**	**0.64**	0.16 U	0.2 U	0.16 U	0.14 U
VI-31	SI-EQP-IA-4	Indoor Air	**0.27**	**0.054 J**	0.16 U	0.2 U	0.16 U	0.14 U
VI-31	SI-EQP-IA-6	Indoor Air	**16**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-31	SI-EQP-IA-7	Indoor Air	**19**	0.21 U	0.16 U	0.2 U	0.16 U	**0.11 J**
VI-32	SI-CRPDC-IA-32-1	Indoor Air	**1.8**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-32	SI-CRPDC-IA-32-2	Indoor Air	**1.7**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-33	SI-IA-33-1	Indoor Air	**0.41**	0.21 U	0.16 U	0.2 U	**0.079 J**	0.14 U
VI-33	SI-IA-33-2	Indoor Air	**0.068 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-34	SI-IA-34-1	Indoor Air	**0.14 J**	**0.11 J**	0.16 U	0.2 U	0.16 U	0.14 U
VI-AA-1	SI-EQP-AA-1	Ambient Air	**0.14 J**	0.21 U	0.16 U	0.2 U	0.16 U	0.14 U
VI-AA-2	SI-AA-2-1	Ambient Air	**4.4**	**0.43**	0.16 U	0.2 U	0.16 U	0.14 U
VI-AA-3	SI-AA-3-1	Ambient Air	**0.27**	**0.11 J**	0.16 U	0.2 U	0.16 U	0.14 U
VI-AA-4	SI-AA-4-1	Ambient Air	**0.54**	**0.16 J**	**0.28**	0.2 U	0.16 U	0.14 U

Abbreviations: **Compound detected**
PCE - tetrachloroethene **Compound exceeds one or both of its screening criteria**
TCE - trichloroethene NL - not listed
DCE - dichloroethene µg/m^3 - microgram per cubic meter
U - not detected ID - identification
J - estimated concentration

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Table 2
Subslab Sample Results
Cabo Rojo Groundwater
Contamination Site Cabo Rojo,
Puerto Rico

Location	Sample ID	Sample Type	PCE	TCE	cis-1,2-DCE	Vinyl Chloride	1,1-DCE	1,4-Dioxane
Subslab Screening Criteria (µg/m^3)		Residential	359.96	15.95	NL	5.59	6952.38	18.72
		Commercial	1572.31	99.71	NL	92.91	29200.00	81.76
VI-2	SI-SS-2-1	Subslab	**9.2**	**0.38 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-3	SI-SS-3-1	Subslab	**7.1**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-4	SI-SS-4-1	Subslab	**0.41 J**	**0.86 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-5	SI-SS-5-1	Subslab	68 U	54 U	40 U	26 U	40 U	90 U
VI-6	SI-SS-6-1	Subslab	**53**	**0.16 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-7	SI-SS-7-1	Subslab	68 U	54 U	40 U	26 U	40 U	90 U
VI-8	SI-SS-8-1	Subslab	**7**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-10	SI-SS-10-1	Subslab	**1.8**	1.1 U	0.79 U	0.51 U	0.79 U	**0.36 J**
VI-11	SI-SS-11-1	Subslab	**0.68 J**	**3.4**	0.79 U	0.51 U	0.79 U	1.8 U
VI-12	SI-SS-12-1	Subslab	**77**	**0.48 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-13	SI-SS-13-1	Subslab	**1,000**	**3.3**	0.79 U	0.51 U	0.79 U	1.8 U
VI-14	SI-SS-14-1	Subslab	**67**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-15	SI-SS-15-1	Subslab	**90**	**0.21 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-16	SI-SS-16-1	Subslab	**26**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-17	SI-SS-17-1	Subslab	**9.7**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-18	SI-SS-18-1	Subslab	**9.5 J**	21 U	16 U	10 U	16 U	36 U
VI-20	SI-SS-20-1	Subslab	**0.54 J**	**0.16 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-21	SI-SS-21-1	Subslab	**1.2 J**	1.1 U	0.79 U	0.51 U	0.79 U	**0.32 J**
VI-22	SI-SS-22-1	Subslab	**0.47 J**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-23	SI-SS-23-1	Subslab	**7.5**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-24	SI-SS-24-1	Subslab	**6**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-26	SI-SS-26-1	Subslab	**15**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-27	SI-SS-27-1	Subslab	**0.61 J**	**0.11 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-28	SI-SS-28-1	Subslab	**1 J**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-29	SI-SS-29-1	Subslab	**340**	**0.81 J**	4 U	2.6 U	4 U	9 U
VI-29	SI-SS-29-2	Subslab	**4.7 J**	**7 J**	**2.8 J**	5.1 UJ	7.9 UJ	18 U
VI-29	SI-SS-29-3	Subslab	**1400**	**4.8 J**	7.9 U	5.1 UJ	7.9 UJ	18 U
VI-30	SI-SS-30-1	Subslab	**0.27 J**	1.1 U	0.79 U	0.51 U	0.79 U	**0.65 J**
VI-30	SI-SS-30-2	Subslab	**2**	1.1 U	0.79 U	0.51 U	0.79 U	**0.79 J**
VI-31	SI-EQP-SS-1	Subslab	**2,900**	**11 J**	40 U	26 U	40 U	90 U
VI-31	SI-EQP-SS-2	Subslab	**2,600**	**0.64 J**	0.79 U	0.51 U	0.79 U	1.8 U
VI-31	SI-EQP-SS-3	Subslab	**2,300**	**0.54 J**	0.79 U	0.51 U	0.79 U	**0.18 J**
VI-31	SI-EQP-SS-4	Subslab	**6,600**	**1.2**	0.79 U	0.51 U	0.79 U	1.8 U
VI-31	SI-EQP-SS-5	Subslab	**1,500**	**3.7**	0.79 U	0.51 U	0.79 U	1.8 U
VI-31	SI-EQP-SS-6	Subslab	**9,400**	**110 J**	**0.36 J**	0.51 U	0.79 U	1.8 U
VI-31	SI-EQP-SS-7	Subslab	**9,000**	**7.6**	0.79 U	0.51 U	0.79 U	**0.43 J**
VI-32	SI-CRPDC-SS-32-1	Subslab	**240,000**	**83**	40 U	26 U	40 U	90 U
VI-32	SI-CRPDC-SS-32-2	Subslab	**40,000**	**40 J**	40 U	26 U	40 U	90 U
VI-32	SI-CRPDC-SS-32-3	Subslab	**8,800**	**32 J**	40 U	26 U	40 U	90 U
VI-32	SI-CRPDC-SS-32-4	Subslab	**600**	11 U	7.9 U	5.1 U	7.9 U	18 U
VI-33	SI-SS-33-1	Subslab	**15**	1.1 U	0.79 U	0.51 U	0.79 U	1.8 U
VI-33	SI-SS-33-2	Subslab	**97**	1.1 U	0.79 U	0.51 U	0.79 U	**3.6**
VI-34	SI-SS-34-1	Subslab	**250**	**0.21 J**	0.79 U	0.51 U	0.79 U	**0.14 J**

Abbreviations: **Compound detected**
PCE - tetrachloroethene **Compound exceeds one or both of its screening criteria**
TCE - trichloroethene NL - not listed
DCE - dichloroethene µg/m^3 - microgram per cubic meter
U - not detected ID - identification
J - estimated concentration

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Table 3
Summary of Chemicals of Concern and
Medium-Specific Exposure Point Concentrations

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point[2]	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)[1]	EPC Units	Statistical Measure
		Minimum	Maximum					
Tap Water - Plume 1	cis-1,2-dichloroethylene	1.5	410	µg/l	12 / 12	377	µg/l	99% Chebyshev (Mean, Sd) UCL
	Tetrachloroethylene	1.2	530	µg/l	12 / 12	248	µg/l	95% Chebyshev (Mean, Sd) UCL
	Trichloroethylene	0.79	140	µg/l	12 / 12	65	µg/l	95% Chebyshev (Mean, Sd) UCL
	Vinyl chloride	0.023 (J)	65	µg/l	8 / 12	61	µg/l	99% KM (Chebyshev) UCL

Footnotes:
(1) 95% UCLs were calculated using ProUCL version 5.1 for constituent data sets with a sample size greater than or equal to 10 samples and 5 or more detects.
(2) Although risks were quantitatively evaluated for Plume 2 receptors, the resulting risks were within or below the target risk range ($1x10^{-6}$ to $1x10^{-4}$) and below the noncancer hazard index threshold of 1. However, 1,1-dichloroethene is also considered a chemical of concern since it was detected above the Puerto Rico Water Quality Standard and Federal MCL (7 µg/L) in this exposure area.

Definitions:
EPC = exposure point concentration
J = estimated value (qualifier)
UCL = upper confidence limit
µg/l = microgram per liter

Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

This table presents the chemicals of concern (COCs) along with exposure point concentrations (EPCs) for each of the COCs detected in site media (*i.e.*, the concentration used to estimate the exposure and risk from each COC). The table includes the range of concentrations detected for each COC, as well as the frequency of detection (*i.e.,* the number of times the chemical was detected in the samples collected at the site), the EPC and how it was derived.

Table 4
Selection of Exposure Pathways

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor (Age)	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/ Future	Soil	Surface Soil	EQP, CRPDC, DEFDC, Serrano II, PRIDCO East, PRIDCO West	Worker	Adult	Dermal	None	Workers may contact surface soil through incidental ingestion, dermal contact, and inhalation of particulates and/or volatiles while working at the site. Concentrations detected in surface soil were below risk-based screening criteria.
						Ingestion	None	
						Inhalation	None	
				Trespassers	Adolescent (12 to <18 yrs)	Dermal	None	Trespassers may contact surface soil through incidental ingestion, dermal contact, and inhalation of particulates and/or volatiles while working at the site. Concentrations detected in surface soil were below risk-based screening criteria.
						Ingestion	None	
						Inhalation	None	
	Surface Water	Surface Water	Drainage Ways	Recreational User	Adolescent (12 to <18 yrs)	Dermal	None	Recreational users may contact surface water through incidental ingestion and dermal contact. Concentrations detected in surface water were, however, below risk-based screening criteria.
						Ingestion	None	
	Sediment	Sediment	Drainage Ways	Recreational User	Adolescent (12 to <18 yrs)	Dermal	None	Recreational users may contact sediment through incidental ingestion and dermal contact. Concentrations detected in sediment were, however, below risk-based screening criteria.
						Ingestion	None	
	Groundwater	Indoor Air	Indoor Air	Worker	Adult	Inhalation	Qualitative	Workers may be exposed to contaminants in indoor air via vapor intrusion. Indoor air and sub-slab concentrations were screened against commercial vapor intrusion screening levels in the risk assessment.
Future	Groundwater	Groundwater[1]	Tap Water	Resident	Adult and Child (birth to <6 yrs)	Dermal	Quantitative	Residents are currently using groundwater from the public water supply for all their household needs. If wells are installed within the plume(s) of site contamination, or if the public water treatment systems fail or are otherwise bypassed, residents may be exposed to contaminants in groundwater used as tapwater.
						Ingestion	Quantitative	
						Inhalation	Quantitative	
				Worker	Adult	Ingestion	Quantitative	Businesses are currently using groundwater from the public water supply. If wells are installed within the plume(s) of site contamination, or if the public water treatment systems fail or are otherwise bypassed, workers may be exposed to contaminants in groundwater used as tapwater at work.
		Indoor Air	Indoor Air	Resident	Adult and Child (birth to <6 yrs)	Inhalation	Qualitative	If commercial properties are redeveloped for residential use, residents may be exposed to contaminants in indoor air via vapor intrusion. Current sub-slab and indoor air concentrations were screened against residential vapor intrusion screening levels in the risk assessment.
	Soil	Surface and Subsurface Soil	EQP, CRPDC, DEFDC, Serrano II, PRIDCO East, PRIDCO West	Construction Worker	Adult	Dermal	None	If construction occurs in the future, construction workers may contact surface and subsurface soil while working at the site. Concentrations detected in soil were, however, below risk-based screening criteria.
						Ingestion	None	
						Inhalation	None	
		Surface Soil	EQP, CRPDC, DEFPDC, Serrano II, PRIDCO East, PRIDCO West	Resident	Adult and Child (birth to <6 yrs)	Dermal	None	If commercial properties are redeveloped for residential use, residents may contact surface soil through incidental ingestion, dermal contact, and inhalation of airborne particulates while at their residence. Concentrations detected in surface soil were, however, below risk-based screening criteria.
						Ingestion	None	
						Inhalation	None	

Footnotes:
(1) Two plumes of contamination were identified at the Site. Exposures and risks were estimated separately for each plume assuming future supply wells may be installed within the core of each plume.

Definitions:
EQP = Extasy Q Prints
CRPDC = Cabo Rojo Professional Dry Cleaners
PRIDCO = Puerto Rico Industrial Development Company
DEFDC = D'Elegant Fantastic Dry Cleaners

Summary of Selection of Exposure Pathways

This table describes the exposure pathways associated with the varying media (soil, sediment, surface water and groundwater) that were evaluated in the risk assessment along with the rationale for the inclusion or exclusion of each pathway. Exposure media, exposure points, and characteristics of receptor populations are also included.

Table 5
Non-Carcinogenic Toxicity Data Summary

Pathway: Ingestion/Dermal

Chemicals of Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Absorp. Efficiency (Dermal)[1]	Adjusted RfD (Dermal)	Adjusted Dermal RfD Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD Target Organ	Dates of RfD[2]
cis-1,2-dichloroethylene	Chronic	0.002	mg/kg-day	1	0.002	mg/kg-day	Kidney	3,000	IRIS	12/15/2017
Tetrachloroethylene	Chronic	0.006	mg/kg-day	1	0.006	mg/kg-day	Neurological/Liver/ Kidney	1,000	IRIS	12/15/2017
Trichloroethylene	Chronic	0.0005	mg/kg-day	1	0.0005	mg/kg-day	Heart/Immunological/ Developmental/Kidney	10 to 1,000	IRIS	12/15/2017
Vinyl chloride	Chronic	0.003	mg/kg-day	1	0.003	mg/kg-day	Liver	30	IRIS	12/15/2017

Pathway: Inhalation

Chemicals of Concern	Chronic/ Subchronic	Inhalation RfC	Inhalation RfC Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfC Target Organ	Dates of RfC[2]
cis-1,2-dichloroethylene	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	Chronic	0.04	mg/m^3	Neurological/Liver/Kidney	1,000	IRIS	12/15/2017
Trichloroethylene	Chronic	0.002	mg/m^3	Heart/Immunological/Liver	10 to 100	IRIS	12/15/2017
Vinyl chloride	Chronic	0.1	mg/m^3	Liver	30	IRIS	12/15/2017

Footnotes:
(1) Source: Risk Assessments Guidance for Superfund. Volume 1: Human Health Evaluation Manual (Part E). Section 4.2 and Exhibit 4-1.
(2) Dates reflect when the source was searched and not the publication date.

Definitions:
IRIS = Integrated Risk Information System
mg/kg-day = milligram per kilogram per day
mg/m^3 = milligram per cubic meter
NA = not available
RfC = reference concentration
RfD = reference dose

Summary of Toxicity Assessment

This table provides noncarcinogenic risk information relevant to the contaminants of concern at the Site. Toxicity data are provided for the ingestion, dermal and inhalation routes of exposure.

Table 6
Cancer Toxicity Data Summary

Pathway: Ingestion/ Dermal

Chemical of Concern	Oral Cancer Slope Factor	Units	Adjusted Cancer Slope Factor (for Dermal)	Slope Factor Units	Weight of Evidence/Cancer Guideline[1]	Source	Date[2]
cis-1,2-dichloroethylene	NA	NA	NA	NA	Inadequate information to assess carcinogenic potential	IRIS	12/15/2017
Tetrachloroethylene	2.1E-03	$(mg/kg\text{-}day)^{-1}$	2.1E-03	$(mg/kg\text{-}day)^{-1}$	likely to be carcinogenic to humans	IRIS	12/15/2017
Trichloroethylene[3]	4.6E-02	$(mg/kg\text{-}day)^{-1}$	4.6E-02	$(mg/kg\text{-}day)^{-1}$	carcinogenic to humans	IRIS	12/15/2017
Vinyl chloride	7.2E-01	$(mg/kg\text{-}day)^{-1}$	7.2E-01	$(mg/kg\text{-}day)^{-1}$	A	IRIS	12/15/2017

Pathway: Inhalation

Chemical of Concern	Unit Risk	Units	Inhalation Cancer Slope Factor	Slope Factor Units	Weight of Evidence/Cancer Guideline[1]	Source	Date[2]
cis-1,2-dichloroethylene	NA	NA	NA	NA	Inadequate information to assess carcinogenic potential	NA	NA
Tetrachloroethylene	2.60E-07	$(mg/kg\text{-}day)^{-1}$	NA	NA	likely to be carcinogenic to humans	IRIS	12/15/2017
Trichloroethylene[4]	4.10E-06	$(mg/kg\text{-}day)^{-1}$	NA	NA	carcinogenic to humans	IRIS	12/15/2017
Vinyl chloride	4.4E-06	$(mg/kg\text{-}day)^{-1}$	NA	NA	A	IRIS	12/15/2017

Footnotes:
(1) Weight of evidence information obtained from IRIS. Categories are as follows:
A=Known human carcinogen
B2=Probable human carcinogen based on sufficient evidence of carcinogenicity in animals
C=Possible human carcinogen
D=Not classifiable due to lack of animal bioassays and human studies
(2) Dates reflect when the source was searched and not the publication date.
(3) The slope factor is adult-based. TCE is carcinogenic by a mutagenic mode of action for induction of kidney tumors. The kidney lifetime oral slope factor is $9.3x10^{-3}$ per mg/kg-day.
(4) The inhalation unit risk is adult-based. TCE is carcinogenic by a mutagenic mode of action for induction of kidney tumors. The kidney lifetime unit risk is $1.0x10^{-6}$ per $\mu g/m^3$.

Definitions:
IRIS = Integrated Risk Information System
IUR = inhalation unit risk
NA = not available
(mg/kg-day)-1 = per milligrams per kilogram per day
$(\mu g/m^3)^{-1}$ = per micrograms per cubic meter

Summary of Toxicity Assessment

This table provides carcinogenic risk information relevant to the contaminants of concern at the Site. Toxicity data are provided for the ingestion, dermal and inhalation routes of exposure.

Table 7
Risk Characterization Summary - Non-Carcinogens

Scenario Timeframe: Future
Receptor Population: Resident (Plume 1)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical Of Concern	Primary Target Organ(s)	Non-Carcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater[2]	Groundwater	Tap Water	cis-1,2-dichloroethylene	Kidney	9.4	NA	NA	9.4
			Tetrachloroethylene	Neurological/Liver/ Kidney	2.1	1.2	3.7	6.9
			Trichloroethylene	Heart/Immunological/ Developmental/Kidney/Liver	6.5	1.1	2.3	27.9
			Vinyl chloride	Liver	1.0	0.1	0.4	1.5
							Groundwater Hazard Index Total[1]=	**48**
							Receptor Hazard Index[1]=	**48**
							Neurological HI =	**7**
							Developmental HI =	**28**
							Heart HI =	**28**
							Immune System HI =	**28**
							Kidney HI =	**44**
							Liver HI =	**36**
							Lung HI =	**1**

Scenario Timeframe: Future
Receptor Population: Worker (Plume 1)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical Of Concern	Primary Target Organ(s)	Non-Carcinogenic Hazard Quotient	
					Ingestion	Exposure Routes Total
Groundwater[2]	Groundwater	Tap Water	cis-1,2-dichloroethylene	Kidney	4	4
			Trichloroethylene	Heart/Immunological/ Developmental/Kidney/Liver	2.8	2.8
					Groundwater Hazard Index Total[1]=	**9**
					Receptor Hazard Index[1]=	**9**
					Neurological HI =	**1**
					Developmental HI =	**3**
					Heart HI =	**3**
					Immune System HI =	**3**
					Kidney HI =	**8**
					Liver HI =	**4**

Footnotes:
(1) The HI represents the summed HQs for all chemicals of potential concern at the site, not just those requiring remedial action (i.e., the chemicals of concern [COCs]) which are shown in this table.
(2) Noncarcinogenic hazards were also evaluated for the resident and worker within Plume 2, however, the resulting hazards were below the target HI of 1. 1,1-Dichloroethene is still considered a COC since it was detected above the Puerto Rico Water Quality Standard and Federal MCL (7 µg/L).

Definitions:
HI = Hazard Index
HQ = Hazard Quotient
MCL = Maximum Contaminant Level
NA = not available
µg/L = microgram per liter

Table 8
Risk Characterization Summary - Carcinogens

Scenario Timeframe: Future
Receptor Population: Resident (Plume 1)
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemical Of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater[2]	Groundwater	Tap Water	Trichloroethylene	6.E-05	9.E-06	1.E-04	2.E-04
			Vinyl chloride	3.E-03	1.E-04	9.E-03	1.E-02
						Exposure Medium Total=	**1.E-02**
						Total Risk[1]=	**1.E-02**

Scenario Timeframe: Future
Receptor Population: Worker (Plume 1)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical Of Concern	Carcinogenic Risk	
				Ingestion	Exposure Routes Total
Groundwater[2]	Groundwater	Tap Water	Vinyl chloride	3.E-04	3.E-04
				Exposure Medium Total=	**4.E-04**
				Total Risk[1]=	**4.E-04**

Footnotes:
(1) Total Risk values represent cumulative estimates from exposure to all chemicals of potential concern at the site, not just those requiring remedial action (*i.e.,* the chemicals of concern [COCs]) which are shown in this table.
(2) Cancer risks were also evaluated for the resident and worker within Plume 2, however, the resulting risks were below or within the target risk range. 1,1-Dichloroethene is still considered a COC since it was detected above the Puerto Rico Water Quality Standard and Federal MCL (7 µg/L).

Definitions:
MCL = Maximum Contaminant Level
NA = not available
µg/L = microgram per liter

Table 9
Risk Screening Summary - Vapor Intrusion

Chemical of Concern[1]	Unit	Sub-slab Vapor VISL[2]	Indoor Air VISL[2]	Sub-slab Vapor Results[3]	Indoor Air Results[3]
cis-1,2-dichloroethylene[4]	µg/m^3	NL	NL	2.8 (J)	0.28
Tetrachloroethylene	µg/m^3	1,572	47	240,000	19
Trichloroethylene	µg/m^3	100	3	110 (J)	3.4
Vinyl chloride	µg/m^3	93	2.8	ND	ND
1,1-dichloroethene	µg/m^3	29,200	876	ND	0.07 (J)

Footnotes:
(1) Although results of the data collected indicate that elevated sub-slab vapor and indoor air concentrations were primarily associated with tetrachloroethylene and trichloroethylene, results for each of the chemicals of concern in groundwater are presented.
(2) Since elevated sub-slab vapor and indoor air concentrations were predominantly observed at the CRPDC and EQP source areas, the EPA Vapor Intrusion Screening Levels for sub-slab and indoor air displayed are based on future commercial exposure at a target risk of $1x10^{-6}$ for carcinogens and a target hazard quotient of 1 for noncarcinogens, as calculated using the online EPA VISL calculator.
(3) Sub-slab and indoor air samples were collected by EPA in 2012, 2013 and 2017. The results presented include the maximum detections identified from the most recent round of sampling.
(4) No VISLs have been established for cis-1,2-dichloroethylene in sub-slab vapor or indoor air.

Definitions:
CRPDC = Cabo Rojo Professional Dry Cleaners
EPA = Environmental Protection Agency
EQP = Extasy Q Prints
J = estimated value (qualifier)
ND = not detected in any sample above the reporting limit
NL = not listed
µg/m^3 = microgram per cubic meter
VISL = Vapor Intrusion Screening Level

Table 10, Remediation Goals for Soil

Contaminant of Concern	Soil Protective of Groundwater	PRG	Maximum Detected Concentration
	µg/kg	µg/kg	µg/kg
cis-1,2-DCE	417	417	480J
PCE	132	132	3,700
TCE	141	141	35J

J - Estimated result

Table 11, Remediation Goals for Groundwater

Contaminant of Concern	EPA MCLs (µg/L)	PR Water Quality Standard (µg/L)	PRG (µg/L)	MDC Plume 1 (µg/L)	MDC Plume 2 (µg/L)
1,1-DCE	7	7	7	0.54	40
cis-1,2-DCE	70	NL	70	93	0.27J
PCE	5	5	5	96	ND
TCE	5	5	5	35	0.79
Vinyl chloride	2	0.25	0.25	0.28	0.28

ND - Not detected
NL - Not Listed
MCL - Maximum Contaminant Levels
MDC - Maximum Detected Concentration

Table 12 - Screening Levels for Vapor Intrusion		
Contaminant of Concern	**Commercial Screening Level**	**Maximum Detected Concentrations**
	µg/m³	**µg/m³**
Sub-Slab		
1,1-DCE	29,200	ND
Vinyl chloride	93	ND
Cis 1,2-DCE	NL	2.8J
PCE	1,572	240,000
TCE	100	110J
Indoor Air		
1,1-DCE	876	0.079J
Vinyl chloride	2.8	ND
Cis-1,2-DCE	NL	0.28
PCE	47	19
TCE	3	3.4

Table 13
Cost Estimate Summary
Selected Remedy
Cabo Rojo Groundwater
Contamination Site
Cabo Rojo, Puerto Rico

	Description	Cost
CAPITAL COSTS		
1	General Requirements	$738,000
2&3	DPE System Construction and Startup	$957,000
4	First Year DPE Operation and Maintenance	$354,000
	Subtotal	*$2,049,000*
	Contingency 20%	$410,000
	Subtotal	*$2,459,000*
	Administrative	$330,000
	Total Remedial Action Capital Costs	**$2,789,000**
OPERATION AND MAINTENANCE COSTS		
5	Annual O&M for DPE System Operating Intermittently	$279,000
	Present worth of O&M Years 2-5 Operation	$884,000
6	Present worth of DPE Performance Evaluation (Year 5)	$63,000
7	Annual Monitoring Cost for Plume #1 and Plume #2	$126,000
	Present worth of Monitoring (30 Years)	$1,564,000
PRESENT WORTH		
	Total Capital Cost	$2,789,000
	Total O&M Cost	$2,511,000
	Total Present Worth	**$5,300,000**

Note: The project cost presented above represent a Feasibility Study-level estimate. Costs are subject to change pending the results of the pre-design investigation. Expected accuracy range of the cost estimate is -30% to +50%. Present worth calculation assumes 7% discount rate after inflation is considered.

Table 14
Chemical-specific ARARs, TBCs, Other Criteria, and Guidance
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Regulatory Level	Name	Synopsis
Federal	EPA Regional Screening Levels (RSLs) (November 2017)	Establishes risk-based screening levels for the protection of human health.
Federal	National Primary Drinking Water Standards (40 CFR Part 141), Maximum Contaminant Levels (MCLs)	Establishes health-based standards for public drinking water systems. Also establishes drinking water quality goals set at levels at which no adverse health effects are anticipated, with an adequate margin of safety. Groundwater at the site is currently not used as a source of drinking water.
Federal	Clean Water Act, Ambient Water Quality Criteria (40 CFR Part 131)	Sets criteria for water quality based on protection of human health and protection of aquatic life.
Federal	OSWER Vapor Intrusion Assessment: Vapor Intrusion Screening Level (VISL) Calculator Version 3.0, November 2012 RSLs	Along with RSLs, provides screening values that can be used to address vapor intrusion concerns using groundwater, soil gas (exterior to buildings and sub-slab), and indoor air concentrations.
Commonwealth of Puerto Rico	Puerto Rico Water Quality Standards (PRWQS) Regulation, August 2014	This regulation exists to preserve, maintain and enhance the quality of the waters of Puerto Rico and regulate any discharge of any pollutant to the waters of Puerto Rico by establishing water quality standards. Water quality standards and use classifications are promulgated for the protection of the uses assigned to coastal, surface, estuarine, wetlands, and ground waters of Puerto Rico.

ARARs - Applicable or relevant and Appropriate Requirements
TBC- To be Considered Criteria
CFR - Code of Federal Regulations
PRGs - Preliminary Remediation Goals
OSWER - Office of Solid Waste and Emergency Response
MCLs - Maximum Contaminant Levels

Table 15
Location-specific ARARs, TBCs, Other Criteria, and Guidance
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Regulatory Level	Name	Synopsis
Federal	National Historic Preservation Act Regulations (36 C.F.R. Part 800)	This requirement establishes procedures to provide for preservation of historical and archeological data that might be destroyed through alteration of terrain as a result of a federal construction project or a federally licensed activity or program.

ARARs - Applicable or relevant and Appropriate Requirements
TBC- To be Considered Criteria
CFR - Code of Federal Regulations
PRGs - Preliminary Remediation Goals
OSWER - Office of Solid Waste and Emergency Response
MCLs - Maximum Contaminant Levels

Table 16
Action-specific ARARs, TBCs, Other Criteria, and Guidance
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Regulatory Level	Name	Synopsis
Federal	OSHA Recording and Reporting Occupational Injuries and Illnesses (29 CFR 1904)	This regulation outlines the record keeping and reporting requirements for an employer under OSHA.
Federal	OSHA Occupational Safety and Health Standards (29 CFR Part 1910)	These regulations specify an 8-hour time- weighted average concentration for worker exposure to various organic compounds. Training requirements for workers at hazardous waste operations are specified in 29 CFR 1910.120.
Federal	OSHA Safety and Health Regulations for Construction (29 CFR Part 1926)	This regulation specifies the type of safety equipment and procedures to be followed during site remediation.
Federal	RCRA Identification and Listing of Hazardous Wastes (40 CFR Part 261)	This regulation describes methods for identifying hazardous wastes and lists known hazardous wastes.
Federal	RCRA Standards Applicable to Generators of Hazardous Wastes (40 CFR Part 262)	Describes standards applicable to generators of hazardous wastes.
Federal	RCRA Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities – General Facility Standards (40 CFR Parts 264.10–264.19)	This regulation lists general facility requirements including general waste analysis, security measures, inspections, and training requirements.
Commonwealth of Puerto Rico	Regulation of the Puerto Rico Environmental Quality Board (PREQB) for the Prevention and Control of Noise Pollution	This standard provides the standards and requirements for noise control.
Commonwealth of Puerto Rico	Puerto Rico's Anti-degradation Policy set forth in Puerto Rico's Water Quality Standards	Conserve, maintain and protect the designated and existing uses of the waters of Puerto Rico. The water quality necessary to protect existing uses, including threatened and endangered species shall be maintained and protected.

ARARs - Applicable or relevant and Appropriate Requirements
TBC- To be Considered Criteria
CFR - Code of Federal Regulations
PRGs - Preliminary Remediation Goals
OSWER - Office of Solid Waste and Emergency Response
MCLs - Maximum Contaminant Levels

Table 16 (continued)
Action-specific ARARs, TBC, Other Criteria, and Guidance
Cabo Rojo Groudwater Contamination Site
Cabo Rojo, Puerto Rico

Regulatory Level	Name	Synopsis
General - Site Remediation		
Federal	Department of Transportation (DOT) Rules for Transportation of Hazardous Materials (49 CFR Parts 107, 171, 172, 177 to 179)	This regulation outlines procedures for the packaging, labeling, manifesting, and transporting hazardous materials.
Federal	RCRA Standards Applicable to Transporters of Hazardous Waste (40 CFR Part 263)	Establishes standards for hazardous waste transporters.
Federal	RCRA Land Disposal Restrictions (40 CFR Part 268)	This regulation identifies hazardous wastes restricted for land disposal and provides treatment standards for land disposal.
Federal	RCRA Hazardous Waste Permit Program (40 CFR Part 270)	This regulation establishes provisions covering basic EPA permitting requirements.
Commonwealth of Puerto Rico	PREQB Regulation for the Control of Non-Hazardous Solid Waste (November 1997)	This regulation establishes standards for the generation, management, transportation, recovery, disposal and management of non- hazardous solid waste.
Commonwealth of Puerto Rico	PREQB Regulation for the Control of Hazardous Solid Waste (September 1998)	This regulation establishes standards for management and disposal of hazardous wastes.

ARARs - Applicable or relevant and Appropriate Requirements
TBC- To be Considered Criteria
CFR - Code of Federal Regulations
PRGs - Preliminary Remediation Goals
OSWER - Office of Solid Waste and Emergency Response
MCLs - Maximum Contaminant Levels

Table 16 (continued)
Action-specific ARARs, TBCs, Other Criteria, and Guidance
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Regulatory Level	Name	Synopsis
Federal	National Pollutant Discharge Elimination System (NPDES) (40 CFR Parts 100, *et seq*.)	NPDES permit requirements for point source discharges must be met, including the NPDES Best Management Practice (BMP) Program. These regulations include, but are not limited to, requirements for compliance with water quality standards, a discharge monitoring system, and records maintenance.
Federal	Safe Drinking Water Act – Underground Injection Control (UIC) Program (40 CFR Parts 144 and 146)	Establish performance standards, well requirements, and permitting requirements for groundwater re-injection wells.
Commonwealth of Puerto Rico	Puerto Rico Water Quality Standards (PRWQS) Regulation, August 2014	This regulation is to preserve, maintain and enhance the quality of the waters of Puerto Rico and regulate any discharge of any pollutant to the waters of Puerto Rico by establishing water quality standards. Water quality standards and use classifications are promulgated for the protection of the uses assigned to coastal, surface, estuarine, wetlands, and ground waters of Puerto Rico.

ARARs - Applicable or relevant and Appropriate Requirements
TBC- To be Considered Criteria
CFR - Code of Federal Regulations
PRGs - Preliminary Remediation Goals
OSWER - Office of Solid Waste and Emergency Response
MCLs - Maximum Contaminant Levels

Table 16 (continued)
Action-specific ARARs, TBCs, Other Criteria, and Guidance
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Regulatory Level	ARARs	Synopsis
Federal	Clean Air Act (CAA)—National Ambient Air Quality Standards (NAAQs) (40 CFR Part 50-52, 60, and 40)	These provide air quality standards for particulate matter, lead, NO_2, SO_2, CO, and volatile organic matter.
Federal	Standards of Performance for New Stationary Sources (40 CFR Part 60)	Set the general requirements for air quality.
Federal	National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)	These provide air quality standards for hazardous air pollutants.
Federal	Federal Directive - Control of Air Emissions from Superfund Air Strippers (OSWER Directive 9355.0-28)	Provides guidance on control of air emissions from air strippers used at Superfund Sites for groundwater treatment.
Commonwealth of Puerto Rico	PREQB Regulation for the Control of Atmospheric Pollution (2012)	Describes requirements and procedures for obtaining air permits and certificates; rules that govern the emission of contaminants into the ambient atmosphere.

ARARs - Applicable or relevant and Appropriate Requirements
TBC- To be Considered Criteria
CFR - Code of Federal Regulations
PRGs - Preliminary Remediation Goals
OSWER - Office of Solid Waste and Emergency Response
MCLs - Maximum Contaminant Levels

APPENDIX III

Administrative Record Index

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

05/09/2019 **REGION ID: 02**

Site Name: CABO ROJO GROUND WATER CONTAMINATION
CERCLIS ID: PRN000206319
OUID: 01
SSID: A244
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
538299	5/9/2019	ADMINISTRATIVE RECORD INDEX FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	8	Administrative Record Index		(US ENVIRONMENTAL PROTECTION AGENCY)
357225	Undated	INDOOR AND AMBIENT AIR SAMPLING ANALYSIS FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	16	Report		
260235	12/31/1996	HYDROGEOLOGY AND GROUND WATER / SURFACE WATER RELATIONS IN THE BAJURA AREA OF THE MUNICIPO OF CABO ROJO, SOUTHWESTERN PUERTO RICO, U.S. GEOLOGICAL SURVEY WATER RESOURCES INVESTIGATION REPORT 95-4159 FOR CABO ROJO GROUND WATER CONTAMINATION SITE	36	Report		RODRIGUEZ-MARTINEZ,JESUS (US GEOLOGICAL SURVEY (USGS))
152258	10/01/2010	HAZARD RANKING SYSTEM (HRS) PACKAGE FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	39	Report		(US ENVIRONMENTAL PROTECTION AGENCY)
152259	10/01/2010	HAZARD RANKING SYSTEM (HRS) REFERENCE 1 THROUGH 31 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	1317	Report		(US ENVIRONMENTAL PROTECTION AGENCY)
152260	10/01/2010	HAZARD RANKING SYSTEM (HRS) REFERENCE 32 THROUGH 61 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	2543	Report		(US ENVIRONMENTAL PROTECTION AGENCY)
255354	05/02/2011	WORK PLAN FOR WORK ASSIGNMENT NO. SERAS-130 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	7	Report	(US ENVIRONMENTAL PROTECTION AGENCY)	(LOCKHEED MARTIN INCORPORATED)

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DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
255349	06/06/2011	QUALITY ASSURANCE PROJECT PLAN FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	98	Work Plan	(US ENVIRONMENTAL PROTECTION AGENCY)	(LOCKHEED MARTIN INCORPORATED)
255343	06/10/2011	HEALTH AND SAFETY PLAN FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	32	Work Plan		MCBURNEY,JON (LOCKHEED MARTIN INC)
255348	07/05/2011	PRELIMINARY RESULTS OF VOCS IN AIR ANALYSIS USING SERAS SOP NO. 1814 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	4	Report	CATANZARITA,JEFF (US ENVIRONMENTAL PROTECTION AGENCY)|PRINCE,GEORGE (US ENVIRONMENTAL PROTECTION AGENCY)	KANSAL,VINOD (LOCKHEED MARTIN TECHNOLOGY SERVICES)
260236	01/27/2012	WELL LOGS AND ANY ADDITIONAL INFORMATION GATHERED DURING THE EARLY 1990'S TO COMPLETE THE U.S. GEOLOGICAL SURVEY REPORT FOR THE BAJURA AREA FOR CABO ROJO GROUND WATER CONTAMINATION SITE	109	Report	ZENO,DENISE (US ENVIRONMENTAL PROTECTION AGENCY)	RODRIGUEZ-MARTINEZ,JESUS (US GEOLOGICAL SURVEY (USGS))
219217	02/16/2012	SOIL GAS INVESTIGATION TRIP REPORT JUNE 13 TO JUNE 17, 2011 - WORK ASSIGNMENT NO.: SERAS-130 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	77	Report	CATANZARITA,JEFF (US ENVIRONMENTAL PROTECTION AGENCY)|MILLER,DENNIS,A (LOCKHEED MARTIN/REAC)	MCBURNEY,JON (LOCKHEED MARTIN INC)
123984	02/16/2012	TRIP REPORT SOIL AND GAS INVESTIGATION SERAS-WA#0-130 FOR CABO ROJO GROUND WATER CONTAMINATION SITE	82	Report	CATANZARITA,JEFF (US ENVIRONMENTAL PROTECTION AGENCY)	MCBURNEY,JON (LOCKHEED MARTIN INC)
283763	02/21/2012	WORK PLAN VOLUME 1 PART 1 - SECTION 1 - 3 TEXT FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	85	Work Plan	(US ENVIRONMENTAL PROTECTION AGENCY)	(CDM FEDERAL PROGRAMS CORPORATION)
260256	02/24/2012	LETTER HEALTH CONSULTATION FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	8	Report		(US DEPT OF HEALTH AND HUMAN SERVICES)

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DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
219089	03/02/2012	NATIONAL PRIORITIES LIST (NPL) SITE NARRATIVE FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	2	Report		
219102	03/05/2012	EQP BUILDING SAMPLING LOCATIONS FIGURE AND PRELIMINARY RESULTS OF VOCS IN AIR ANALYSIS FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	17	Report		
219108	03/05/2012	PRELIMINARY RESULTS OF VOCS IN AIR ANALYSIS FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	69	Report		
283744	03/05/2012	PRELIMINARY RESULTS OF VOCS FOR TO-15 ANALYSIS OF 23 AIR SAMPLES - WORK ASSIGNMENT NO. 0-130 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	16	Report	CATANZARITA,JEFF (US ENVIRONMENTAL PROTECTION AGENCY)	KANSAL,VINOD (LOCKHEED MARTIN TECHNOLOGY SERVICES)
260250	03/09/2012	PRELIMINARY RESULTS OF VOCS IN AIR SAMPLING USING SERAS SOP NO. 1814 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	136	Report	CATANZARITA,JEFF (US ENVIRONMENTAL PROTECTION AGENCY)	KANSAL,VINOD (LOCKHEED MARTIN TECHNOLOGY SERVICES)
283499	03/09/2012	PRELIMINARY RESULTS OF VOCS FOR TO-15 ANALYSIS OF 34 AIR SAMPLES - WORK ASSIGNMENT NO. 0-130 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	24	Report	CATANZARITA,JEFF (US ENVIRONMENTAL PROTECTION AGENCY)	KANSAL,VINOD (LOCKHEED MARTIN TECHNOLOGY SERVICES)
255417	03/13/2012	SITE ACTION PLAN FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	2	Work Plan		(US ENVIRONMENTAL PROTECTION AGENCY)

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DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
283769	03/30/2012	PRELIMINARY RESULTS OF VOCS FOR TO-15 ANALYSIS OF 68 INDOOR AIR SAMPLES - WORK ASSIGNMENT NO. 0-130 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	47	Report	CATANZARITA,JEFF (US ENVIRONMENTAL PROTECTION AGENCY)	KANSAL,VINOD (LOCKHEED MARTIN TECHNOLOGY SERVICES)
219126	04/03/2012	PRELIMINARY RESULTS OF VOCS IN AIR FOR TO-15 ANALYSIS OF 51 SOIL GAS SAMPLES - WORK ASSIGNMENT NO. 0-130 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	39	Report	CATANZARITA,JEFF (US ENVIRONMENTAL PROTECTION AGENCY)	KANSAL,VINOD (LOCKHEED MARTIN TECHNOLOGY SERVICES)
241406	04/16/2012	US EPA 104E REQUEST FOR INFORMATION SENT TO THE PUERTO RICO INDUSTRIAL DEVELOPMENT COMPANY FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	12	Letter	(PUERTO RICO INDUSTRIAL DEVELOPMENT COMPANY)	DIFORTE,NICOLETTA (US ENVIRONMENTAL PROTECTION AGENCY)
219218	05/07/2012	FINAL FEBRUARY AND MARCH 2012 SUB-SLAB SOIL GAS AND INDOOR AIR SAMPLING TRIP REPORT - WORK ASSIGNMENT NO.: SER00130 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	326	Report	CATANZARITA,JEFF (US ENVIRONMENTAL PROTECTION AGENCY)|MILLER,DENNIS,A (LOCKHEED MARTIN/REAC)	CARTWRIGHT,MICHAEL (LOCKHEED MARTIN TECHNOLOGY SERVICES)
255352	05/07/2012	TRIP REPORT - SUB-SLAB SOIL GAS AND INDOOR AIR SAMPLING FOR 02/2012 AND 03/20112 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	172	Report	CATANZARITA,JEFF (US ENVIRONMENTAL PROTECTION AGENCY)	CARTWRIGHT,MICHAEL (LOCKHEED MARTIN TECHNOLOGY SERVICES)|MILLER,DENNIS,A (LOCKHEED MARTIN/REAC)
284283	05/22/2012	FINAL HEALTH CONSULTATION - EVALUATION OF INDOOR AIR SAMPLING FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	32	Report		(AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY)

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OUID: 01
SSID: A244
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
219088	07/12/2012	POLLUTION REPORT NO. 1 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	5	Report	PANE,MARK (US ENVIRONMENTAL PROTECTION AGENCY)|ROTOLA,JOSEPH (US ENVIRONMENTAL PROTECTION AGENCY)|VELAZQUEZ,PASQUAL (PUERTO RICO ENVIRONMENTAL QUALITY BOARD)	ANDERSON,ARLENE,R (US ENVIRONMENTAL PROTECTION AGENCY)
219090	07/17/2012	US EPA OSC WEBPAGE: SITE PROFILE REGARDING THE CABO ROJO GROUND WATER CONTAMINATION SITE	2	Publication		
462674	09/27/2012	PUBLIC HEALTH ASSESSMENT FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	86	Report		(DEPARTMENT OF HEALTH & HUMAN SERVICES)
266045	10/15/2012	CDM SMITH - RAC2 - CONTRACT NO. EP-W-09-002 - WA NO. 045-RICO-A244 - REVISED FINAL WORK PLAN VOLUME 1 REMEDIAL INVESTIGATION / FEASIBILITY STUDY FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	119	Work Plan		(CDM FEDERAL PROGRAMS CORPORATION)
241420	10/16/2012	PUERTO RICO INDUSTRIAL DEVELOPMENT COMPANY'S (PRIDCO) RESPONSE (PART 1 OF 2) TO US EPA 104E REQUEST FOR INFORMATION FOR CABO ROJO GROUND WATER CONTAMINATION SITE	88	Letter	WIEDER,MARLA,E (US ENVIRONMENTAL PROTECTION AGENCY)	GREENTHAL,JOHN,L (NIXON PEABODY LLP)
241422	10/16/2012	PUERTO RICO INDUSTRIAL DEVELOPMENT COMPANY'S (PRIDCO) RESPONSE (PART 2 OF 2 APPENDICES) TO US EPA 104E REQUEST FOR INFORMATION FOR CABO ROJO GROUND WATER CONTAMINATION SITE	1401	Letter	WIEDER,MARLA,E (US ENVIRONMENTAL PROTECTION AGENCY)	GREENTHAL,JOHN,L (NIXON PEABODY LLP)

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

05/09/2019 **REGION ID: 02**

Site Name: CABO ROJO GROUND WATER CONTAMINATION
CERCLIS ID: PRN000206319
OUID: 01
SSID: A244
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
241421	10/18/2012	TRANSMITTAL OF THE CERTIFICATION OF ANSWERS TO THE US EPA 104E REQUEST FOR INFORMATION FOR CABO ROJO GROUND WATER CONTAMINATION SITE	1	Letter	WIEDER,MARLA,E (US ENVIRONMENTAL PROTECTION AGENCY)	GREENTHAL,JOHN,L (NIXON PEABODY LLP)
219091	11/19/2012	NATIONAL PRIORITIES LIST (NPL) REMOVAL SITE EVALUATION (RSE) FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	11	Report	ROTOLA,JOSEPH (US ENVIRONMENTAL PROTECTION AGENCY)	MAGRIPLES,NICHOLAS (US ENVIRONMENTAL PROTECTION AGENCY)
283786	04/10/2013	PRELIMINARY RESULTS FOR TO-15 SIM - WORK ASSIGNMENT NO. 0-130 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	45	Report	SINGHVI,RAJESHMAL (US ENVIRONMENTAL PROTECTION AGENCY)	BARKLEY,MISTY (LOCKHEED MARTIN INFORMATION SYSTEMS & GLOBAL SOLUTIONS)
283811	04/24/2013	FINAL ANALYTICAL REPORT FOR WORK ASSIGNMENT NO. SERAS-045 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	33	Report	MICKUNAS,DAVID (US ENVIRONMENTAL PROTECTION AGENCY)	KANSAL,VINOD (LOCKHEED MARTIN TECHNOLOGY SERVICES)
255353	05/17/2013	FINAL TRIP REPORT - SUB-SLAB SOIL GAS AND INDOOR AIR SAMPLING FOR 03/20113 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	40	Report	CATANZARITA,JEFF (US ENVIRONMENTAL PROTECTION AGENCY)	MILLER,DENNIS,A (LOCKHEED MARTIN/REAC)|SOLINSKI,PHILIP (LOCKHEED MARTIN INCORPORATED)
284328	05/21/2013	PENUELAS LANDFILL COMPLIANCE NOTIFICATION FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	1	Publication	RODRIGUEZ,RENE,R (PENUELAS VALLEY LANDFILL INCORPORATED)	GREALISH,BECKETT (US ENVIRONMENTAL PROTECTION AGENCY)
266145	08/13/2013	TECHNICAL EVALUATION FOR WORK PLAN LETTER DATED 07/29/2013 FOR WORK ASSIGNMENT 045-RICO-A244 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	2	Report		(CDM FEDERAL PROGRAMS CORPORATION)

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05/09/2019 **REGION ID: 02**

Site Name: CABO ROJO GROUND WATER CONTAMINATION
CERCLIS ID: PRN000206319
OUID: 01
SSID: A244
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
283421	11/01/2013	BOREHOLE GEOPHYSICAL LOGGING REPORT FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	58	Report	(CDM SMITH)	(HAGER-RICHTER GEOSCIENCE)
284336	11/07/2013	DESA LABORATORY FINAL REPORT FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	57	Report	KIRCHNER,SCOTT (CDM FEDERAL PROGRAMS CORPORATION)	BOURBON,JOHN (US ENVIRONMENTAL PROTECTION AGENCY)
538164	05/18/2017	US EPA 104E REQUEST FOR INFORMATION SENT TO MULTIPLE DRY CLEANER COMPANIES FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	14	Letter	CABAZZA-SOTO,CANDIDA (BORINCANO DRY CLEANING)|FLORES,LIZA,ORTIZ (D'ELEGANT FANTASTIC DRY CLEANERS)|MATOS,LYDIA (SERRANO DRY CLEANERS I)|MATOS,LYDIA (SERRANO DRY CLEANERS II)|RAMIREZ,ROBERTO,LUGO (ROBERT'S CLEANERS)|RAMIREZ,ROBERTO,LUGO (ROBERT'S STEAM LAUNDRY)|RONDA,HECTOR (ACEVEDO CLEANERS)|ROSADO-MEDINA,RAMON (CABO ROJO PROFESSIONAL DRY CLEANERS)	WILSON,ERIC,J (US ENVIRONMENTAL PROTECTION AGENCY)
537337	01/22/2018	FINAL SCREENING LEVEL ECOLOGICAL ASSESSMENT FOR RI/FS STUDY WORK ASSIGNMENT 045-RICO-A244, CONTRACT EP-W-09-002 FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	57	Report		(CDM SMITH)
537845	04/09/2018	FINAL HUMAN HEALTH RISK ASSESSMENT FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	255	Report		(CDM SMITH)

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

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05/09/2019 **REGION ID: 02**

Site Name: CABO ROJO GROUND WATER CONTAMINATION
CERCLIS ID: PRN000206319
OUID: 01
SSID: A244
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
538296	04/10/2018	REMEDIAL INVESTIGATION REPORT FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	966	Report		(CDM SMITH)
541885	06/01/2018	FINAL FEASIBILITY STUDY REPORT FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	162	Report		(CDM SMITH)
538320	07/31/2018	PUERTO RICO LAWS REGARDING DRINKING WATER WITHDRAWAL REGULATIONS	17	Other		
550160	08/02/2018	US EPA NOTICE OF POTENTIAL LIABILITY SENT TO PUERTO RICO INDUSTRIAL DEVELOPMENT COMPANY (PRIDCO) FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	2	Letter	RIVERA,MANUEL,LABOY (PUERTO RICO INDUSTRIAL DEVELOPMENT COMPANY)	WILSON,ERIC,J (US ENVIRONMENTAL PROTECTION AGENCY)
550161	08/02/2018	US EPA NOTICE OF POTENTIAL LIABILITY SENT TO EXTASY Q PRINTS FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	2	Letter	SIERRA,JOSE,LUIS (EXTASY Q PRINTS)	WILSON,ERIC,J (US ENVIRONMENTAL PROTECTION AGENCY)
538298	08/02/2018	PROPOSED PLAN FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	27	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)
538408	4/1/2019	LONG-TERM MONITORING COST FOR PLUME 2 DOWNGRADIENT OF PRIDCO EAST FOR THE CABO ROJO GROUND WATER CONTAMINATION SITE	1	Chart/Table		

APPENDIX IV

Public Notices

La Agencia Federal de Protección Ambiental
Anuncia el Plan Propuesto y Periodo de Comentarios
Para el Lugar de Superfondo Contaminación del Agua Subterránea de Cabo Rojo
Cabo Rojo, Puerto Rico

Aviso Público

La Agencia Federal de Protección Ambiental (EPA, por sus siglas en inglés) en colaboración con la Junta de Calidad Ambiental de Puerto Rico, anuncia el comienzo de un período de treinta (30) días de comentario público comenzando el 2 de agosto de 2018 y extendiéndose hasta el 3 de septiembre de 2018 para la evaluación del Plan Propuesto para el lugar conocido como el Lugar de Superfondo Contaminación del Agua Subterránea de Cabo Rojo, localizado en el municipio de Cabo Rojo, Puerto Rico. El Plan Propuesto describe la acción preferida de la EPA (Alternativa #2) y la razón para esta recomendación. La Alternativa 2 consiste en la instalación y operación de un sistema SVE/DPE, monitoreo de atenuación natural, como contingencia tratamiento in-situ y controles institucionales. Antes de finalizar este proceso, la EPA tomará en consideración comentarios escritos y verbales recibidos sobre la acción preferida presentada en el Plan Propuesto. El periodo de comentarios públicos comenzara el 2 de agosto de 2018, todos los comentarios deben ser recibidos en o antes del 3 de septiembre de 2018. La EPA proveerá un resumen de todos los comentarios y sus respuestas en el Récord de Decisión para este Lugar.

La EPA llevará a cabo una reunión pública el 9 de agosto de 2018, de 6:00 pm a 8:00 pm en la sala de conferencias de la Biblioteca Pública Blanca E. Colberg localizada en la calle José de Diego #312 en Cabo Rojo, Puerto Rico. El propósito de esta reunión es informarle a la comunidad sobre los hallazgos, conclusiones y recomendaciones de la investigación remedial realizada en el Lugar. Además, se discutirá la acción preferida de la EPA para el Lugar. Durante esta reunión pública, la EPA contestará preguntas o comentarios que los participantes puedan tener con relación a la investigación realizada y la acción preferida propuesta por la EPA.

Las copias del Plan Propuesto y otros documentos relacionados al lugar están disponibles en los siguientes repositorios de información:

Biblioteca Pública Blanca E. Colberg
Calle José de Diego #312
Cabo Rojo, PR 00641
(787) 851-2284
Horario: Lunes – Viernes 7:30am a 4:30 pm

Puerto Rico Environmental Quality Board
Emergency Response and Superfund Program
Edificio de Agencias Ambientales Cruz A. Matos
Urbanización San José Industrial Park
1375 Avenida Ponce de León
San Juan, PR 00926-2604
(787)767-8181 ext 3207
Horario: Lunes – Viernes 9:00am a 3:00 pm
Por cita

Agencia Federal de Protección Ambiental, Región 2
División de Protección Ambiental del Caribe
City View Plaza II- Suite 7000
48 RD, 165 Km. 1.2
Guaynabo, PR 00968-8069
Fax: (787) 289-7104 (787) 977-5869
Horario: Lunes - Viernes, 9:00 a.m. a 4:30 p.m.
Por cita

U.S. Environmental Protection Agency, Region 2
290 Broadway, 18th floor
New York, New York 10007-1866
(212) 637-4308
Horario: Lunes -Viernes, 9:00 a.m. a 3:30 p.m.
Por cita

Para más información, favor llamar al (787) 977-5870
Comentarios escritos del Plan Propuesto deben ser enviados a:

Ing. Daniel Rodríguez
Gerente de Proyectos
U.S Environmental Protection Agency, Region 2
División de Protección Ambiental del Caribe
City View Plaza II- Suite 7000
48 RD, 165 Km. 1.2
Guaynabo, PR 00968-8069
Internet: rodriguez.daniel@epa.gov
Tel. (787) 664-8523

Report Prepared on August 2023

Anuncio de Extensión de Periodo de Comentario Público
Para el Lugar de Superfondo Contaminación del Agua Subterránea de Cabo Rojo

La Agencia Federal de Protección Ambiental (EPA, por sus siglas en inglés) ha extendido el periodo de comentario público para el Plan Propuesto del Lugar de Superfondo Contaminación del Agua Subterránea de Cabo Rojo ubicado en el municipio de Cabo Rojo en Puerto Rico. La Agencia ha extendido el periodo de comentario que terminaba el 3 de septiembre de 2018. El nuevo periodo de comentario comenzará el martes 4 de septiembre de 2018 y terminará el viernes 5 de octubre de 2018.

La EPA llevó a cabo una reunión con la comunidad el 9 de agosto de 2018 para explicar el Plan Propuesto. La EPA está proponiendo un sistema SVE/DPE, monitoreo de atenuación natural, como contingencia tratamiento in-situ y controles institucionales (alternativa #2) como la alternativa preferida para el lugar por ser la que lograría efectivamente los objetivos de la acción correctiva. Puede ver el Plan Propuesto en la dirección electrónica **http://www.epa.gov/superfund/cabo-rojo-groundwater**. También los documentos relacionados a la investigación del lugar pueden ser encontrados en la biblioteca Blanca E. Colberg.

Los comentarios sobre este Plan Propuesto deben ser enviados a:

Ing. Daniel Rodríguez
Gerente de Proyectos
U.S Environmental Protection Agency, Region 2
División de Protección Ambiental del Caribe
City View Plaza II- Suite 7000
48 RD, 165 Km. 1.2
Guaynabo, PR 00968-8069
Internet: **rodriguez.daniel@epa.gov**
Tel. (787) 664-8523

APPENDIX V

Proposed Plan and Fact Sheet (Spanish)

Superfund Program Proposed Plan

Cabo Rojo Groundwater Contamination Superfund Site

Cabo Rojo, Puerto Rico
August 2018

EPA Region 2

EPA ANNOUNCES PROPOSED CLEANUP PLAN

This Proposed Plan describes the remedial alternatives developed for the Cabo Rojo Groundwater Contamination Superfund Site (the Site) in Cabo Rojo, Puerto Rico, and identifies the preferred remedy for the Site with the rationale for this preference. This document was developed by the U.S. Environmental Protection Agency (EPA), the lead agency for Site activities, in consultation with the Puerto Rico Environmental Quality Board (PREQB), the support agency. EPA is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9617(a) (CERCLA, commonly known as Superfund), and Sections 300.430(f) and 300.435(c) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

The nature and extent of the contamination at the Site and the remedial alternatives summarized in this document are described in detail in the Remedial Investigation (RI) and Feasibility Study (FS) reports.

EPA's preferred remedy for the Site consists of the following FS alternative to address groundwater contamination at the Site:

- **Soil Vapor Extraction/Dual Phase Extraction (SVE/DPE), Monitored Natural Attenuation (MNA), a Contingency for In-Situ Treatment and Institutional Controls**

COMMUNITY ROLE IN SELECTION PROCESS

EPA relies on public input to ensure that the concerns of the community are considered in selecting an appropriate remedy for each Superfund site. To this end, this Proposed Plan has been made available to the public for a 30-day public comment period, which

MARK YOUR CALENDAR

PUBLIC MEETING
August 9, 2018 at 6:00 pm
Biblioteca Pública Blanca E. Colberg
Calle José de Diego #312
Cabo Rojo, PR 00641

PUBLIC COMMENT PERIOD
August 2, 2018 – September 3, 2018

INFORMATION REPOSITORY
The administrative record file, which contains copies of the Proposed Plan and supporting documentation, is available at the following locations:

Biblioteca Pública Blanca E. Colberg
Calle José de Diego #312
Cabo Rojo, PR 00641
(787) 894-1040
Hours: Monday – Friday 8:00am to 4:30pm

U.S. Environmental Protection Agency
City View Plaza II- Suite 7000
#48 PR-165 Km. 1.2
Guaynabo, PR 00968-8069
(787) 977-5865
Hours: Monday – Friday 9:00am to 4:30pm
By appointment.

Puerto Rico Environmental Quality Board
Emergency Response and Superfund Program
Edificio de Agencias Ambientales Cruz A. Matos
Urbanización San José Industrial Park
1375 Avenida Ponce de León
San Juan, PR 00926-2604
(787) 767-8181 ext. 3207
Hours: Monday – Friday 9:00am to 3:00pm
By appointment.

U.S. EPA Records Center, Region 2
290 Broadway, 18th Floor
New York, New York 10007-1866
(212) 637-4308
Hours: Monday - Friday 9:00am to 5:00pm
By appointment.
Site Profile Page:
www.epa.gov/superfund/cabo-rojo-groundwater

begins with the issuance of this Proposed Plan and concludes on September 3, 2018.

EPA is providing information to the public regarding the investigation and cleanup of the Site through a public meeting and the public repositories, which contain the administrative record file. EPA encourages the public to gain a more comprehensive understanding of the Site and the Superfund activities that have been conducted there.

The public meeting held during the comment period is designed to provide information regarding the Site investigations, the alternatives considered, and the preferred remedy, as well as to receive public comments. Comments received at the public meeting, as well as written comments, will be documented in the Responsiveness Summary section of the Record of Decision (ROD), the document that formalizes the selection of the remedy.

Written comments on this Proposed Plan should be addressed to:

Daniel Rodríguez
Remedial Project Manager
U.S. Environmental Protection Agency
City View Plaza II - Suite 7000
48 RD, 165 Km. 1.2
Guaynabo, Puerto Rico 00968-8069
Telephone: (787) 664-8523
E-mail: rodriguez.daniel@epa.gov

SCOPE AND ROLE OF ACTION

EPA is addressing the cleanup of this Site by implementing a single, comprehensive remedial action to address the soil and the groundwater contamination at the Site.

SITE BACKGROUND

Site Description

The Site is in the Bajura ward in the municipality of Cabo Rojo in southwestern Puerto Rico and consists of three source areas with two groundwater plumes. Cabo Rojo Professional Dry Cleaners (CRPDC) is located in the northern area of Cabo Rojo and is no longer operating. Located approximately 700 feet northeast of CRPDC is another source area, Extasy Q Prints (EQP), which is an active print shop (Figure 1). Approximately 0.7 miles southwest of both CRPDC and EQP is the third source area, Puerto Rico Industrial Development Company (PRIDCO) East, a complex of 10 separate, mostly vacant buildings with a long history of industrial and commercial operations.

Site History

Routine groundwater sampling from the Cabo Rojo Urbano public water supply system from 2002 through 2011 revealed chlorinated volatile organic compounds (VOCs), tetrachloroethene (PCE) and trichloroethene (TCE), in several of the wells below federal maximum contaminant levels. This sparked additional investigations by EPA at potential source areas (PSAs) throughout Cabo Rojo from 2006 to 2012. Soil, groundwater, and soil vapor sampling at several facilities revealed detections of chlorinated VOCs. Based on the data collected, a hazard ranking system package was prepared and the Site was added to the National Priorities List (NPL) on March 10, 2011.

Topography and Drainage

The Site is within the Río Guanajibo alluvial valley. Surface drainage from the Site may either flow north-northeast into the Ciénaga de Cuevas swamp and eventually to the Río Guanajibo (located approximately 2 miles northeast of the Site) or recharge the bedrock aquifer.

Geology and Hydrology

The soil in the Site vicinity generally consists of an unconsolidated overburden unit consisting of silty clay underlain by a saprolite zone composed of hard sandy to silty clay with angular rock fragments transitioning to a sand/gravel matrix with cobble-sized rock fragments. Below the saprolite is the Sabana Grande formation, which consists of a shallow highly fractured, transmissive bedrock zone underlain by a low-transmissivity bedrock zone. A localized zone of alluvium replaces the shallow overburden unit around the CRPDC source area (dark brown clay, fine and medium sand, and brown silt and sand).

Within the unconsolidated zone (alluvium, overburden, and saprolite), the alluvium, where present, provides a preferential flow path for groundwater contamination to move from the unconsolidated deposits into the underlying bedrock. Little groundwater was encountered in the overburden silty clay unit, which, where present, acts as a semi-confining unit overlying the saprolite. The saprolite is a significant water-bearing unit that stores water and provides recharge to the underlying bedrock aquifer. The lateral direction of groundwater flow in the overburden is predominantly to the north in Plume 1 and to the north-northeast in the Plume 2 area.

Groundwater in the bedrock unit is confined, or semi-confined, based on observations during drilling and subsequent water level observations. Overall, the fractured bedrock is very transmissive with a higher hydraulic conductivity compared to the saprolite and alluvium, especially in the shallow bedrock. Site-wide groundwater flow in bedrock is to the north and in Plume 1 it was previously influenced by pumping in the former Ana Maria public supply well. In the northern portion of the Site the flow is directed to the northeast due to a combination of natural groundwater discharge toward the Bajura area and the long-term pumping influence of active public supply wells farther downgradient (Figure 2). There is an upward vertical gradient from the deepest monitoring zones in the deep bedrock toward the higher transmissivity shallow zone. The vertical gradient is larger in the northern site area, than in the southern site area because it is closer to natural groundwater discharge in the Bajura area, and the water supply wells are completed in the limestone.

Land Use

The Cabo Rojo municipality is 72 square miles in size, with a population of 50,917; the Bajura ward has a population of 2,423 (U.S. Census 2010). The primary land uses near the Site are agricultural, residential, and commercial development.

Ecology

In general, the Site is heavily developed and consists of a downtown commercial district, residential areas, warehouse complexes, and various other developments. Undeveloped land is limited to the immediate corridor of an unnamed stream that flows from the south through the center of town northward to the Ciénaga de Cuevas swamp. Although United States Fish and Wildlife Service records indicate that the Site is located within the range of the federally (threatened or endangered) listed yellow-shouldered blackbird (*Agelaius xanthomus*) and the Puerto Rican boa (*Epicrates inornartus*), threatened, endangered, and rare species and sensitive environments were not observed during the site reconnaissance. This is likely due to the highly urbanized nature of the Site

EARLY SITE INVESTIGATIONS

In 2006, EPA collected groundwater samples from active public and private supply wells in and around Cabo Rojo and began investigating 68 PSAs. Data from EPA and PRASA sampling indicated VOCs were detected most frequently in the Ana Maria (PCE, TCE, and cis-1,2-dichloroethene [cis-1,2-DCE]) and Club de Leones (1,1-dichloroethene [1,1-DCE]) wells.

From 2010 to 2012, EPA continued to investigate PSAs with soil, groundwater, and soil vapor testing and identified the following five facilities (Figure 1) where chlorinated solvents were detected:

- **EQP** – This facility was identified as an active printing business that printed designs onto t-shirts, towels, and bags. Cleaning solutions used at the facility contained VOCs, including PCE. An outdoor screen washing area was identified that discharged wash solutions to a floor drainage trench. Soil vapor samples revealed the presence of PCE, TCE, and cis-1,2-DCE at and near the facility.
- **CRPDC** – This facility consisted of a closed laundering and dry-cleaning business. Operations reportedly used PCE, which was contained in waste sludge stored at the facility. Soil vapor samples revealed the presence of PCE and TCE.
- **D'Elegant Fantastic Dry Cleaners** – This facility consisted of a dry-cleaning business that used solvents containing VOCs, including

TCE. The facility closed in 2009 and has since been replaced with a Walgreens store. Soil vapor samples revealed the presence of PCE, TCE, and cis-1,2-DCE.

- **Serrano II Dry Cleaners** – This facility consisted of a dry-cleaning business. Soil vapor samples revealed the presence of PCE and TCE.

- **PRIDCO East** – This facility is a complex consisting of 10 buildings. Although various commercial and industrial operations (including electrical products manufacturing and textile manufacturing) have occupied different buildings in the past, most buildings are now empty. Soil vapor samples revealed the presence of 1,1-DCE. 1,4-dioxane was also found in low concentrations in the groundwater.

NATURE AND EXTENT OF CONTAMINATION

PCE, TCE, cis-1,2-DCE, vinyl chloride, and 1,1-DCE were selected as the Site-related contaminants (SRCs) based on known past uses at the identified PSAs, the frequency and magnitude of detections in Site media during the RI investigation, and exceedances of their respective screening criteria. Although 1,4-dioxane was selected preliminarily as a SRC based on the groundwater concentrations relative to its groundwater screening criterion, results of the HHRA and SLERA indicate that the concentrations observed do not yield risks above EPA thresholds to human health or the environment. Therefore, 1,4-dioxane was not the focus of the RI Report or remedial alternatives evaluated in the FS.

Additional RI soil and groundwater sampling was conducted in 2017 at PRIDCO East. Although the soil samples from this recent sampling event did not exhibit detections of VOCs, previous soil vapor investigations in 2011 revealed detections of 1,1-DCE at two vacant facilities in the northern portion of the PRIDCO East property. Furthermore, 1,1-DCE was detected in one soil screening sample in the far northeast corner of the property during the 2013 field investigation. These results indicate a historical source area of 1,1-DCE in PRIDCO East soils. Additionally, site-related VOCs were not detected in upgradient wells MW-10 and MW-21R but were present in groundwater screening samples at PRIDCO East (during the 2017 RI sampling event) and in monitoring wells downgradient from PRIDCO East.

Results from groundwater screening and two rounds of monitoring well samples revealed two distinct areas of groundwater contamination, designated as Plume 1 and Plume 2, as described below (See Figure 3). Plume 1 is near the CRPDC and EQP source areas, and Plume 2 is in the southern area of Cabo Rojo, downgradient of the PRIDCO East source area.

Following Hurricane Maria, an additional round of groundwater samples was collected to confirm that pre-hurricane conditions remained the same (see Table 1 for a compilation of the 3 rounds of data).

Summary of Soil Contamination

Soil delineation samples were collected from five PSAs for laboratory analysis and validation. The soil analytical results revealed elevated concentrations of PCE and cis-1,2-DCE at EQP and PCE at CRPDC (Figures 4 and 5). The other three PSAs (D'Elegant Fantastic Dry Cleaners, Serrano II Dry Cleaners, PRIDCO East) exhibited either low detections or no detections of VOCs in the soil delineation samples. The soil analytical results and known prior uses established EQP and CRPDC as source areas.

As discussed above, additional RI soil and groundwater sampling was conducted in 2017 at PRIDCO East. These and prior results helped identify PRIDCO East as a source area.

Summary of Groundwater Contamination

Two distinct areas of groundwater contamination have been identified.

Plume 1, the groundwater plume to the north, encompasses the CRPDC and EQP source areas and the Ana Maria well. At CRPDC, PCE, TCE, cis-1,2-DCE, and vinyl chloride are present in the shallow

alluvium (MW-4 well) and in the upper bedrock aquifer (MW-4R well), where the alluvium well is situated about 30 ft above the bedrock well screen. Both wells are hydraulically upgradient of the Ana Maria well. The highest concentrations of PCE (530 ug/L), TCE (140 ug/L), cis-1,2-DCE (410 ug/L), and vinyl chloride (65 ug/L) occurred in an alluvial well (MW-4) at CRPDC during Round 1 (Feb 2014). Round 2 (May 2017) data showed an order of magnitude decrease of PCE (27 ug/L), TCE (10 ug/l), cis-1,2-DCE (44 ug/L), and vinyl chloride (1.2 ug/L) in this alluvial well, MW-4. While VOCs concentrations are lower in Round 2, they remain above screening criteria, with the exception of cis-1,2-DCE. The EQP facility is also a source area contributing to Plume 1. PCE, TCE, and cis-1,2-DCE were detected in soil and groundwater at EQP at lower concentrations than at CRPDC. VOCs in the unconsolidated zone of Plume 1 extend to the Ana Maria well area but do not extend into the Bajura area. Historical pumping at the Ana Maria well likely drew contaminated groundwater from EQP and CRPDC toward the Ana Maria well. The Ana Maria former supply well has been sampled by PRASA and EPA since 2002. From 2002 to 2017, PCE and TCE concentrations detected in the Ana Maria well range from non-detect to a maximum PCE concentration of 4.0 ug/L in 2002, below the EPA MCL of 5 ug/L.

In general, Plume 1 is primarily in the alluvium, the lower portion of the overburden/saprolite zone, and the upper portion of the bedrock zone. Concentrations of site-related contaminants generally decreased in samples from the CRPDC wells from Round 1 to Round 2, due to a combination of natural attenuation and lack of ongoing releases from CRPDC. The one exception is Pozo Escuela, a former supply well for a school converted to a multi-port bedrock monitoring well, which showed a slight increase of PCE from Round 1 (1.3 ug/L) to Round 2 (5.1 ug/L) A third round of post-Maria hurricane data were collected in 2018 and concentrations were relatively consistent with some slight increases most notably in MW-4. This suggests that large storm events may support release of residual contamination into groundwater until the source is removed from the vadose zone and shallow groundwater at CRPDC and EQP.

Plume 2, the groundwater plume in the south consists of a 1,1-DCE plume near PRIDCO East. A series of 3 shallow groundwater transects were collected (a total of 19 locations) across the PRIDCO East site. These samples were collected in the saprolite zone and exhibited concentrations of 1,4-dioxane and 1,1-DCE at concentrations up to 12 µg/L and 1.3 µg/L, respectively, below their respective criteria. The presence of these constituents in the saprolite groundwater at the PRIDCO east facility suggest a historical source of groundwater contamination that can be linked to downgradient bedrock detections of 1,4-dioxane and 1,1-DCE through fractures in bedrock, allowing contamination to migrate through preferential pathways. The contaminants were detected in bedrock wells downgradient of PRIDCO East at concentrations up to 58 µg/L for 1,1-DCE (MW-18R, Round 1) and up to 9.3 µg/L for 1,4-dioxane (MPW-9R, Round 2). However, 1,4-dioxane concentrations observed at the Site did not yield any risk or hazard above EPA's thresholds to human health or the environment. Therefore, Plume 2 is regarded mainly as a 1,1-DCE plume. Round 2 data shows an overall decrease in 1,1-DCE concentrations with MW-18R showing non-detect levels of 1,1-DCE and a reduction of 1,1-DCE in MPW-9R with a decrease from Round 1 to Round 2 in all four bedrock ports. The maximum concentration of 1,1-DCE during Round 2 was found in the new bedrock monitoring well MW-19R with a concentration of 34 ug/L (Figure 3). The third round of data collected after Hurricane Maria in Plume 2 monitoring wells were consistent with Round 2 data.

During the RI investigation, MNA indicator parameters of biotic and abiotic degradation were collected from monitoring wells to evaluate whether subsurface conditions are conducive to in situ natural degradation of chlorinated VOCs. MNA parameters included the following:

> Field parameters: pH, specific conductivity, dissolved oxygen (DO), temperature, ferrous iron and Oxidation reduction potential (ORP) as Eh Laboratory analysis: nitrate/nitrite, sulfate, sulfide, alkalinity, chloride, total organic content (TOC), methane, ethane, ethene, acetylene, and propane.

The MNA data were collected for Rounds 1 and 2 and used to evaluate which MNA mechanisms are

occurring in Plumes 1 and 2. Plume 1 was found to show some evidence that natural attenuation has been occurring. While there is limited evidence of ongoing anaerobic biodegradation occurring in the plumes (*e.g.,* low organic carbon levels, lack of electronic receptors), the presence of degradation products (showing degradation to vinyl chloride) in Plume 1 is suggestive that they were generated during the early life of the plume, potentially in the vadose zone or shallow groundwater in and around the release point. The elevated chloride found in Plume 1 monitoring wells is indicative of the dechlorination of PCE. The redox conditions were variable between Rounds 1 and Round 2, indicating reducing conditions may be temporally variable in the aquifer. Additionally, the pH and temperature ranges were shown to be optimal for the growth of bacteria, further supporting a potential for biodegradation.

The order of magnitude decreases in concentrations of PCE and its three daughter products between Round 1 and Round 2 in MW-4 are indicative of a pattern of reduced discharge from the vadose zone to the saturated zone or dilution/dispersion. Additionally, the 2002 peak in PCE concentrations in the Ana Maria well has shown an overall reduction in VOC concentrations and most recently non-detect levels in 2017 providing further evidence of an overall decrease in concentrations in Plume 1 groundwater.

Plume 2 primarily consists of 1,1-DCE with a maximum concentration of 34 ug/L. While organic carbon levels are higher in Plume 2 compared to Plume 1, suggesting a higher potential for biodegradation activity, the levels were still rather low. However, the pH and temperature ranges are supportive for bacterial growth and dissolved oxygen levels range, similar to Plume 1, suggesting certain temporal conditions may be more supportive of biodegradation. Trace concentrations of vinyl chloride in Round 2 suggest localized reduced dechlorination of 1,1-DCE under methanogenic conditions.

Lastly, given the high transmissivity in the upper fractured bedrock, and even the shallow groundwater in both the saprolite and alluvium, the MNA mechanisms of dilution and dispersion will have considerable influence in this aquifer for both Plumes 1 and 2.

Summary of Surface Water/Sediment Contamination

No Site related contaminants were detected in surface water or sediment samples collected from drainage features near the potential source areas.

SUMMARY OF SITE RISKS

As part of the RI/FS, a baseline human health risk assessment (HHRA) was conducted to estimate the risks and hazards associated with the current and future effects of contaminants on human health and the environment. A screening-level ecological risk assessment (SLERA) was also conducted to assess the risk posed to ecological receptors due to Site-related contamination. The purpose of the baseline risk assessment is to identify potential cancer risks and noncancer health hazards and ecological effects caused by hazardous substance exposure in the absence of any actions to control or mitigate these exposures under current and future site uses. The Site is located in a densely populated area that has both commercial and residential uses. This is not expected to change in the future.

In the HHRA, cancer risk and noncancer health hazard estimates are based on current reasonable maximum exposure (RME) scenarios. The estimates were developed by taking into account various health protective estimates about the concentrations, frequency and duration of an individual's exposure to chemicals selected as contaminants of potential concerns (COPCs), as well as the toxicity of these contaminants.

Human Health Risk Assessment

EPA conducted a four-step baseline HHRA to assess Site-related cancer risks and non-cancer health hazards in the absence of any remedial action. The four-step process is comprised of: Hazard Identification, Exposure Assessment, Toxicity Assessment, and Risk Characterization (see adjoining box "What is Risk and How is it Calculated").

The HHRA began with selecting COPCs in the various media (*i.e.,* soil, groundwater, surface water, and sediment) that could potentially cause adverse effects in exposed populations. COPCs are selected

by comparing the maximum detected concentrations of each chemical identified with state and federal risk-based screening values. While potential exposures to soil, sediment and surface water were considered, the chemical concentrations detected in these media were below the applicable screening values. As a result, direct exposure to these media are not expected to result in elevated cancer risk or noncancer health hazard. Therefore, COPCs were only selected for groundwater. Although site groundwater is not currently used for drinking water purposes, the HHRA assumed this groundwater could be used as a source of drinking water in the future. Therefore, the current and future exposure pathways and populations evaluated in the HHRA were limited to the following:

- Site Worker (adult): ingestion of groundwater used as tap water (future) and inhalation of indoor air via vapor intrusion (current and future).

- Resident (child and adult): ingestion, dermal contact, and inhalation of groundwater chemical contaminants while showering/bathing (future), and inhalation of indoor air via vapor intrusion (current and future).

In this assessment, exposure point concentrations were estimated using either the maximum detected concentration of a contaminant or the 95% upper-confidence limit (UCL) of the average concentration. Chronic daily intakes were calculated based on the reasonable maximum exposure (RME), which is the highest exposure reasonably anticipated to occur at the Site. The RME is intended to estimate a conservative exposure scenario that is still within the range of possible exposures. A more detailed discussion of the exposure pathways can be found in the baseline risk human health risk assessment.

Summary of the Human Health Risk Assessment

Groundwater

As previously stated, two separate plumes of groundwater contamination were identified at the Site. The risks and hazards for these plumes were evaluated separately using the EPCs and chronic daily intakes calculated for each. The populations of interest included future child/adult residents and adult workers. Cancer risks were evaluated for the resident throughout a lifetime of exposure. Noncancer hazards were evaluated for the child only as the most sensitive residential receptor. Hazards to the child are considered representative of any hazards to the adult resident. For each of these receptors, exposure to Site-related contaminants in groundwater from Plume 1 results in excess lifetime cancer risk that exceeds EPA's target risk range of $1x10^{-6}$ to $1x10^{-4}$ and a noncancer HI above the acceptable level of 1. Risk and hazard thresholds were exceeded by PCE, TCE, cis-1,2-DCE, vinyl chloride and chromium. However, it is likely that the risk due to chromium is overestimated because it was assumed that all the chromium present is in the more toxic hexavalent form. This is conservative since chromium in the environment is generally dominated by the less toxic, trivalent form. In addition, chromium was not detected at levels exceeding the Puerto Rico Water Quality Standard and Federal MCL in groundwater. Historical information does not indicate the use of hexavalent chromium in source area processes as well. Therefore, chromium is not considered a Site-related contaminant.

For Plume 2, the resulting risks and hazards are below the EPA target risk range and noncancer threshold of unity. However, although 1,1-DCE was unassociated with elevated risk, this chemical was detected within Plume 2 at concentrations above the Puerto Rico Water Quality Standard and Federal MCL (7 µg/L).

Summary of risks and hazards associated with groundwater

Receptor	Hazard Index	Cancer Risk
Plume 1		
Resident – future	48	$1x10^{-2}$
Site Worker – future	9	$4x10^{-4}$
Plume 2		
Resident – future	0.9	$1x10^{-4}$
Site Worker – future	0.2	$1x10^{-5}$

Vapor Intrusion

During the RI, a vapor intrusion investigation was conducted to assess the potential migration of VOC-contaminated vapors into structures in Cabo Rojo

and to assess impacts on indoor air. The indoor air and sub-slab vapor results were compared to EPA vapor intrusion screening levels (VISLs) based on a cancer risk of $1x10^{-6}$ and hazard quotient of 1 for both residential and commercial use.

Results of the data collected indicate that elevated sub-slab vapor and indoor air concentrations predominantly consisted of site-related PCE and TCE, which were primarily associated with the CRPDC and EQP source areas. CRPDC is currently an inactive facility, and EQP is still in use as a commercial facility. Although indoor air concentrations at EQP exceed residential VISLs, the detected concentrations do not exceed commercial VISLs. Indoor air concentrations of site-related contaminants at CRPDC do not exceed either residential or commercial VISLs. However, elevated sub-slab concentrations indicate there is a potential risk from vapors migrating into the structure in the future (see Table 4).

Ecological Risk Assessment

A screening-level ecological risk assessment (SLERA) was conducted to evaluate the potential for ecological risks from the presence contaminants in soil, sediment, surface water, and pore water. The SLERA focused on evaluating the potential for impacts to sensitive ecological receptors to site-related chemicals through exposure to soil, sediment, surface water, and porewater on the Site. Concentrations in the media listed above were compared to ecological screening values as an indicator of the potential for adverse effects to ecological receptors. A complete summary of all exposure scenarios can be found in the SLERA.

SLERA results indicate that although two site-related chemicals were identified in surface soil (cis-1,2-DCE and TCE), there is no suitable habitat for ecological receptors due to the urban nature of the area and the fact that the sample location is in a small area of mowed turf between a parking lot and a building, posing no exposure risk to wildlife receptors. Only non-Site-related contaminants were detected near sediment sample location SD-02 (near CRPDC) and upstream source areas. There is no risk to ecological receptors from exposure to the Site-related chemicals.

WHAT IS RISK AND HOW IS IT CALCULATED?

A Superfund baseline human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these under current- and future-land uses. A four-step process is utilized for assessing site-related human health risks for reasonable maximum exposure scenarios.

Hazard Identification: In this step, the chemicals of potential concern (COPCs) at the site in various media (*i.e.,* soil, groundwater, surface water, and air) are identified based on such factors as toxicity, frequency of occurrence, and fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the contaminants identified in the previous step are evaluated. Examples of exposure pathways include incidental ingestion of and dermal contact with contaminated soil and ingestion of and dermal contact with contaminated groundwater. Factors relating to the exposure assessment include, but are not limited to, the concentrations in specific media that people might be exposed to and the frequency and duration of that exposure. Using these factors, a "reasonable maximum exposure" scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

Toxicity Assessment*:* In this step, the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure and severity of adverse effects are determined. Potential health effects are chemical-specific and may include the risk of developing cancer over a lifetime or other noncancer health hazards, such as changes in the normal functions of organs within the body (*e.g.,* changes in the effectiveness of the immune system). Some chemicals are capable of causing both cancer and noncancer health hazards.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks for all COPCs. Exposures are evaluated based on the potential risk of developing cancer and the potential for noncancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a "one in ten thousand excess cancer risk;" or one additional cancer may be seen in a population of 10,000 people as a result of exposure to site contaminants under the conditions identified in the Exposure Assessment. Current Superfund regulations for exposures identify the range for determining whether remedial action is necessary as an individual excess lifetime cancer risk of 10^{-4} to 10^{-6}, corresponding to a one in ten thousand to a one in a million excess cancer risk. For noncancer health effects, a "hazard index" (HI) is calculated. The key concept for a noncancer HI is that a "threshold" (measured as an HI of less than or equal to 1) exists below which noncancer health hazards are not expected to occur. The goal of protection is 10^{-6} for cancer risk and an HI of 1 for a noncancer health hazard. Chemicals that exceed a 10^{-4} cancer risk or an HI of 1 are typically those that will require remedial action at the site.

Conclusion

Residential and worker exposure to contaminated groundwater within Plume 1, in the absence of any current or ongoing remedial action, yields risks and hazards that exceed EPA's acceptable cancer risk range ($1x10^{-4}$ to $1x10^{-6}$) and noncancer hazard threshold (HI of 1). Although unassociated with elevated risk, 1,1-DCE was detected above Puerto Rico and Federal standards in groundwater within Plume 2 as well. Based on these results, the contaminants of concern (COCs) identified include PCE, TCE, cis-1,2-DCE, vinyl chloride, and 1,1-DCE. Elevated sub-slab vapor and indoor air concentrations predominantly consisted of PCE and TCE, which were primarily associated with the CRPDC and EQP source areas. Although indoor air levels do not currently pose significant risk, elevated sub-slab concentrations indicate a potential risk from vapors migrating into these structures in the future.

It is the lead agency's current judgment that the Preferred Alternative identified in this Proposed Plan, or one of the other active measures considered in the Proposed Plan, is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) are specific goals to protect human health and the environment. These objectives are based on available information and standards, such as applicable or relevant and appropriate requirements (ARARs), to-be-considered (TBC) guidance and Site-specific risk-based levels.

EPA has established expectations to use treatment to address any principal threats posed by a site. Principal threat wastes are those source materials considered to be highly toxic or mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur. The contamination at the Cabo Rojo is not considered principal threat waste.

WHAT IS A "PRINCIPAL THREAT"?

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP Section 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to ground water, surface water or air, or acts as a source for direct exposure. Contaminated ground water generally is not considered to be a source material; however, Non-Aqueous Phase Liquids (NAPLs) in ground water may be viewed as source material. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained, or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of the alternatives using the nine remedy selection criteria. This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

The Site consists of the following media that are impacted by COCs:

- Soil
- Groundwater
- Soil vapor

High concentrations of COCs detected in soil samples at CRPDC (PCE up to 3,700 µg/kg) and EQP (PCE up to 73 µg/kg and cis-1,2-DCE up to 480J µg/kg) indicated contaminated soil could serve as a continuing source for Plume 1 and serve as the source for contaminated soil vapor at the CRPDC and EQP. As a result, soil is a medium of concern, and RAOs have been developed for the Site soils.

PCE and its daughter products and 1,1-DCE were detected above RI screening criteria in groundwater at both plumes. The HHRA demonstrated that contaminated groundwater poses human health risks. Therefore, groundwater is a medium of concern and RAOs have been developed for groundwater.

Surface water and sediment samples were collocated. No COCs were detected in surface water and sediment samples collected from drainage features near source areas. As a result, both surface water and

sediment are not considered media of concern, and no RAOs have been developed for either medium.

Based on the results of indoor air and sub-slab vapor sampling collected in the RI, vapor containing PCE (and to a lesser degree, TCE) in sub-slab has been detected at several buildings, including the CRPDC and EQP buildings. The HHRA report indicates there is a potential risk from vapors migrating into the CRPDC building in the future, but vapor intrusion would not currently pose a risk to workers were it to be occupied. At EQP, the HHRA indicated that vapor intrusion may be occurring but not at levels currently causing a risk to workers. By addressing the soil and groundwater contamination at CRPDC and EQP, soil vapor contamination at these two areas would also be addressed.

To protect human health and the environment, RAOs have been identified.

The RAOs for soil are:

- Prevent contaminated soil from serving as sources of groundwater contamination;
- Prevent/Minimize contaminated soil from serving as sources of current and future vapor intrusion.

The RAOs for groundwater are:

- Prevent human exposure to contaminated groundwater with concentrations above the PRGs;
- Restore the groundwater to drinking water quality;
- Prevent/Minimize contaminated groundwater from serving as sources of current and future vapor intrusion.

PRELIMINARY REMEDIATION GOALS

To meet the RAOs, remediation goals were developed to aid in defining the extent of contaminated groundwater requiring remedial action. Remediation goals are chemical-specific measures for each media and/or exposure route that are expected to be protective of human health and the environment. They are derived based on comparison to ARARs, risk-based levels, and background concentrations, with consideration also given to other requirements such as analytical detection limits, guidance values, and other pertinent information.

Preliminary Remediation Goals for Soil

There are no promulgated federal or commonwealth chemical-specific ARARs for soil. To meet the RAOs for protection of groundwater, site-specific impact to groundwater soil cleanup levels were developed. The Preliminary Remedial Goals (PRGs) for soil are shown in Table 2.

Table 2, Preliminary Remediation Goals for Soil

Contaminant of Concern	Soil Protective of Groundwater	PRG	Maximum Detected Concentration
	µg/kg	µg/kg	µg/kg
cis-1,2-DCE	417	417	480J
PCE	132	132	3,700
TCE	141	141	35J

J – Estimated result

Preliminary Remediation Goals for Groundwater

Groundwater at the site is classified as Class SG (which includes all groundwater as defined in Puerto Rico's Water Quality Standards [PRWQS] regulation [Puerto Rico Environmental Quality Board [PREQB 2014]), suitable for drinking water use and for use as a source of potable water supply in the Commonwealth of Puerto Rico. To restore groundwater quality to accommodate any future uses of site groundwater as drinking water, PRWQS and federal drinking water standards are used. The lower of these two standards is selected as the groundwater PRG for each contaminant. Table 3 presents the PRGs for groundwater.

Table 3, Preliminary Remediation Goals for Groundwater

Contaminant of Concern	EPA MCLs (µg/L)	PR Water Quality Standard (µg/L)	PRG (µg/L)	MDC Plume 1 (µg/L)	MDC Plume 2 (µg/L)
1,1-DCE	7	7	7	0.54	40
cis-1,2-DCE	70	NL	70	93	0.27J
PCE	5	5	5	96	ND
TCE	5	5	5	35	0.79
Vinyl chloride	2	0.25	0.25	0.28	0.28

ND - Not detected
NL - Not Listed
MCL - Maximum Contaminant Levels
MDC - Maximum Detected Concentration

Screening Criteria for Vapor Intrusion

The suitable sub-slab contaminant-screening criteria and indoor air concentration requiring mitigation were based on EPA VISLs guidance for commercial properties and are presented in Table 4. However, the VISLs referenced are frequently updated based on evolving toxicity information. Therefore, the screening criteria may be subject to change. The latest screening criteria for vapor intrusion will be used to monitor sub-slab and indoor air quality over time at CRPDC and EQP.

Table 4, Screening Levels for Vapor Intrusion

Contaminant of Concern	Commercial Screening Level	Maximum Detected Concentrations
	µg/m³	µg/m³
Sub-Slab		
1,1-DCE	29,200	ND
Vinyl chloride	93	ND
Cis 1,2-DCE	NL	2.8J
PCE	1,572	240,000
TCE	100	110J
Indoor Air		
1,1-DCE	876	0.079J
Vinyl chloride	2.8	ND
Cis-1,2-DCE	NL	0.28
PCE	47	19
TCE	3	3.4

SUMMARY OF REMEDIAL ALTERNATIVES

CERCLA § 121(b)(1), 42 U.S.C. § 9621(b)(1), mandates that remedial actions must be protective of human health and the environment, be cost-effective, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which employ, as a principal element, treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants and contaminants at a site. CERCLA § 121(d), 42 U.S.C. § 9621(d), further specifies that a remedial action must attain a level or standard of control of the hazardous substances, pollutants, and contaminants, which at least attains ARARs under federal and state laws, unless a waiver can be justified pursuant to Section 121(d)(4) of CERCLA, 42 U.S.C. § 9621(d)(4).

The time frames presented below for each alternative reflect only the time required to construct or implement the remedy and do not include the time required to design the remedy, negotiate the performance of the remedy with any potentially responsible parties, or procure contracts for design and construction.

The cost estimates, which are based on available information, are order-of-magnitude engineering cost estimates that are expected to be within +50 to -30 percent of the actual cost of the project.

Common Elements

There are several common elements that are included in all active remedial alternatives. With the exception of five-year reviews, the common elements do not apply to the 'No Action' alternatives. The active alternatives include a pre-design investigation (PDI) and a pilot study at the Plume 1 source area. Data obtained during the RI, PDI, and Pilot Study would be used to develop the detailed approach for the Site remediation during the Remedial Design (RD). All aspects necessary for implementing the remedial

action would be considered, including but not limited to the detailed layout of the SVE/DPE system, in-situ treatment system, and construction sequence, regulatory requirements, and estimated remedial action cost. Additionally, a common element of the two active alternatives is Long Term Monitoring and MNA for Plumes 1 and 2 and Institutional Controls. A description of these evaluations is provided below.

Similarly, the nature and extent of contamination in the vadose zone associated with EQP source area would be further delineated in a PDI. The depth of the vadose zone may be 45 feet in this area. While there are more challenges associated with an investigation at EQP, measures can be taken to collect soil data underlying and adjacent to the building.

Long Term Monitoring and MNA at Plume 1

Annual sampling of the existing monitoring well network in Plume 1 would be conducted. It is assumed that PRASA will not conduct routine quarterly monitoring at the Ana Maria supply well because it is no longer active and will not be returned to service. The Ana Maria well will be sampled during the Remedial Action (RA) as part of the Plume 1 monitoring well network. Annual monitoring well network samples would be analyzed for VOCs and MNA parameters. As mentioned above, the reducing conditions seem to vary on a temporal basis. Additional rounds of data will allow for a better understanding of how biodegradation potential in the aquifer may vary with time. Contaminant migration and concentration trends would continue to be evaluated. The monitoring program would proceed until concentrations show at least eight consecutive rounds of compliance with the PRGs, according to EPA's Groundwater Remedy Completion Strategy (EPA 2014). The remediation timeframe is estimated to be 30 years.

Based on the CSM presented in the RI Report, the alluvium is localized between wells MW-4 and MW-15. Contaminated groundwater originating from CRPDC in the alluvium would travel north toward the area of MW-15 then migrate into the overburden and the highly fractured bedrock zone observed in the Pozo Escuela bedrock well (this well that formerly supplied a school, was taken out of service and was converted to monitoring well and sampled during the RI, see Figure 2). Contaminant concentrations in MW-2 and MW-1 were below 10 µg/L during Round 2 sampling in 2017, and the detection of cis-1,2-DCE and vinyl chloride indicated the occurrence of reductive dechlorination in the overburden. Contaminant concentrations in Pozo Escuela were also relatively low (highest PCE concentration was 5.1 µg/L in Round 2). However, increased concentrations of COCs in MW-4 and MW-15 from Round 2 (2017) to Post-Maria (2018) sampling events indicate that the source area at CRPDC continues to contribute to groundwater contamination in the alluvium (See Figure 3).

Because the highly fractured bedrock is very transmissive, concentrations of contaminants entering this zone are expected to decrease through dilution and dispersion. This was observed in bedrock well MW-4R (at CRPDC) where COC concentrations decreased slightly from Round 2 (2017) to Post-Hurricane Maria sampling in 2018. Contaminated groundwater originating from EQP was also detected in the highly fractured bedrock zone where dilution and dispersion may play an important role in decreasing contaminant concentrations. As additional rounds of groundwater monitoring data are collected as part of the long-term monitoring program, the data would be used to assess the ongoing attenuation of the groundwater contamination, mechanisms contributing to the attenuation of Site contaminants, and progress toward meeting the PRGs.

Long Term Monitoring and MNA at Plume 2

Annual sampling of the existing monitoring well network in Plume 2 would be conducted. 1,1-DCE in Plume 2 can degrade under aerobic or anaerobic conditions but is dependent on the presence of the appropriate microbes and substrates to enhance the degradation. VOCs and MNA parameters will be collected from Plume 2 wells to continue to assess MNA. The monitoring program would continue until contaminant concentrations show several consecutive rounds of compliance (preferably eight rounds) with the PRGs according to EPA's Groundwater Remedy Completion Strategy (EPA 2014).

Monitoring of Active PRASA Supply Wells

Analytical data and operational data for Club De Leones and Cabo Rojo 1 through 3 public supply wells would be obtained from PRASA. These supply wells are currently active and operating, but have not historically been impacted by Site-related contamination. PRASA is expected to continue routine quarterly sampling of these wells to ensure they continue to meet drinking water standards.

Site Restoration

After the completion of all remedial actions, associated equipment and infrastructure would be properly removed or demobilized. The Site would be restored to pre-remedial action conditions as much as possible. Site restoration activities may include but are not limited to repairing the building slabs and pavement.

Institutional Controls

Institutional Controls (ICs) are non-engineered controls, such as property or groundwater use restrictions placed on real property by recorded instrument, by a governmental body by law or regulatory activity, or through informational devices such as public notices, that reduce or limit the potential for human exposure to contamination and/or protect the integrity of a remedy.

Government controls, such as local laws, will be employed to limit the installation of groundwater extraction wells at the source areas and in the plume areas until the cleanup is complete. Local laws currently exist in Puerto Rico that limit the installation of any groundwater extraction wells in the absence of a permit.

Informational devices will be used to prevent well installation and prohibit occupancy, use, or new construction in the source areas unless appropriate vapor-intrusion investigations are conducted and/or mitigation measures (including periodic monitoring, as necessary) are implemented. Advisories published in local newspapers and periodic notices sent to local government authorities informing them of the ICs will be issued on a periodic basis until the remedy is complete.

More information about ICs can be found at: www2.epa.gov/sites/production/files/documents/ic_ctzns_guide.pdf

Five-Year Reviews

Per CERCLA, alternatives where it will take longer than five years to achieve cleanup levels under all of the alternatives, CERCLA requires that a review of conditions at the site be conducted no less often than once every five years until such time as cleanup levels are achieved. If justified by the review, additional remedial actions may be implemented to remove, treat, or contain the contamination. The Site review would include evaluation of data collected from the long-term monitoring, a Site-wide visual inspection, and a report prepared by EPA.

EPA Region 2 Clean and Green Policy

The environmental benefits of the preferred remedy may be enhanced by giving consideration, during the design, to technologies and practices that are sustainable in accordance with EPA Region 2's Clean and Green Energy Policy. This will include consideration of green remediation technologies and practices. Some examples of practices that would be applicable are those that reduce emissions of air pollutants, minimize fresh water consumption, incorporate native vegetation into revegetation plans, and consider beneficial reuse and/or recycling of materials, among others.

Remedial Alternatives

The remedial alternatives to address soil and groundwater contamination at the Site are summarized below.

Alternative 1 – No Action

Capital Cost	$0
Present Worth O&M Cost	$0
Total Present Worth	$0
Construction Time Frame	0 years
Timeframe to meet RAOs	0 years

The No Action alternative is required to be considered pursuant to the NCP. The No Action alternative

would include no action being taken and serves as a baseline for comparison of remedial alternatives.

Alternative 2 – SVE/DPE, MNA, Contingency for In-Situ Groundwater Treatment and Institutional Controls

Capital Cost	$2,789,000
Present Worth O&M Cost	$2,511,000
Total Present Worth Cost	$5,300,000
Construction Time Frame	2.5 year
Timeframe to meet RAOs	30 years

This alternative would provide active treatment (soil vapor extraction/dual phase extraction [SVE/DPE]) to the target soil remediation zones and potentially underlying groundwater at CRPDC and EQP (Figures 4 and 5). The Plumes would be managed through the implementation of MNA and long-term monitoring as described previously.

SVE/DPE Installation, Operation, and Maintenance at Source Areas

At CRPDC, DPE wells would be installed to address the vadose zone within the target soil remediation zone defined based on the PDI results. Groundwater extraction would be a component of DPE to remove groundwater contamination at shallow depths also within the target soil remediation zone. At EQP, SVE wells and groundwater extraction wells would be installed separately to address the vadose zone and the shallow groundwater contamination since the groundwater aquifer is a confined unit. The existing building slab and pavements would be inspected, improved, and sealed if necessary and would serve as a cap for the DPE and SVE systems. The SVE/DPE remedy would serve to mitigate potential vapor intrusion into the CRPDC and EQP buildings.

The vapor treatment system would likely consist of compressors, piping, an air-water separator, as necessary, and vapor-phase activated carbon units. Vapor discharged would meet Puerto Rico discharge requirements. The air flow rate (vacuum) and concentrations of contaminants, oxygen, and carbon dioxide in the extracted vapor would be monitored regularly.

The water treatment system would be installed in the same area/building as the vapor treatment system and would treat extracted water using air strippers or liquid-phase activated carbon units per the RD. Depending on the groundwater extraction rate of the DPE system, the treated water might be discharged to the on-site drainage system with appropriate permits or be re-injected into the subsurface. Additional sampling and analysis would be conducted on the vapor and water effluent streams to ensure discharge permit requirements for each medium are met.

SVE/DPE Performance Evaluation at Source Areas

The effectiveness of SVE and/or DPE in the vadose zone soil would be evaluated by collecting soil gas samples. An evaluation would be conducted prior to shut down of the system when the VOC concentrations in extracted vapor are reduced to an asymptotic level and/or the in-situ contaminant concentrations reach one magnitude greater than the PRGs or less, and/or the relative changes in contaminant mass removal decline to a level that continued operation of the system becomes not cost-effective.

The effectiveness of SVE/DPE in minimizing soil contamination from serving as sources to groundwater contamination and soil vapor contamination would be evaluated in conjunction with groundwater and sub-slab vapor sample results. Plume 2 and the dilute portion of Plume 1 would be managed through the implementation of MNA and long-term monitoring. The PRGs for soil and groundwater, along with the vapor intrusion screening levels will be used to determine the effectiveness of the SVE/DPE. It is expected that multiple rounds of sampling will be needed to ensure that this technology has achieved remediation goals.

Sub-Slab and Indoor Air Monitoring

Sub-slab and indoor air samples at the CRPDC and EQP areas would be collected periodically to monitor

the potential or presence of vapor intrusion. Results of vapor samples would be compared to the sub-slab and indoor air VISLs. Monitoring would help inform the progress and effectiveness of the active source remedy (SVE or DPE) and would be conducted until the vadose zone source area is remediated to levels that eliminate the need to mitigate vapor intrusion at the point of exposure. Post treatment vapor monitoring would be conducted to confirm the source has been remediated and no longer contributes to vapor intrusion

Potential contributions of COCs from indoor background sources would be considered during the vapor intrusion monitoring, especially at the EQP facility where active business practices (printing) may utilize VOCs.

Triggers for In-situ Groundwater Treatment for Plume 1

Additional groundwater treatment is not considered as part of this alternative. However, as part of this alternative, the following considerations can be incorporated into the decision document that trigger the need for in-situ groundwater remediation as described in Alternative 3. As additional data from the PDI and groundwater monitoring become available, conditions may indicate the need for active treatment of contaminated groundwater in Plume 1, especially in the vicinities of the two source areas. The considerations include:

- Detection of NAPL in the vadose zone soil, or PCE/TCE concentrations indicative of NAPL (*e.g.,* 1% solubility) at the water table, indicating a continuing source of groundwater contamination;
- Significant increase of contaminant concentrations in MW-15 and/or MW-3R/MW-3RS to greater than one order of magnitude above the PRGs and/or an increasing trend of contaminant concentration in plume wells, such as Ana Maria, MW-2, and MW-1;
- Consistent detections of PCE and/or TCE in sentinel wells, such as MW-16, USGS-OW-1 (for PCE or TCE), and PRASA-1; and
- Consistent detections of PCE and/or TCE in the supply wells.

Alternative 3: SVE/DPE, In-Situ Groundwater Treatment, MNA and Institutional Controls

Capital Cost	$4,866,000
Present Worth O&M Cost	$2,732,000
Total Present Worth	$7,598,000
Construction Time Frame	4-5 years
Timeframe to meet RAOs	30 years

This alternative would provide active treatment (SVE/DPE) to the target soil remediation zones and shallow contaminated groundwater at CRPDC and EQP. SVE/DPE installation, operation, and maintenance at source areas; SVE/DPE performance evaluation at source areas; and sub-slab and indoor air monitoring would be conducted as described in Alternative 2. In addition, under this alternative, the in-situ treatment described as a contingency in Alternative 2 would be part of the alternative. Plume 2 and the dilute portion of Plume 1 would be managed through the implementation of MNA and long-term monitoring.

Pilot Study for Contaminated Groundwater at the Source Areas

At CRPDC, PCE groundwater contamination was detected in MW-4 and MW-4R. During the PDI at CRPDC, groundwater screening borings would be installed within the target treatment zone to obtain the vertical profile of groundwater contamination. The data would be used for the design of in-situ treatment. A pilot study would be conducted to collect site-specific design parameters and groundwater extraction rate.

This alternative assumes that the PDI results from the source area at EQP indicate that groundwater

contamination at EQP requires treatment. A well may be installed to the north of EQP building for a pilot study. The pilot study may be conducted by releasing amendment from the well to the east of EQP building (to be installed during the PDI at source areas) and monitored in wells to the north and west of the EQP building. Wells may also be installed at an angle to reach below the EQP building for the pilot study.

In-Situ Treatment at CRPDC and EQP

Under this alternative, it is assumed that the full depth of contaminated groundwater one order of magnitude above the PRGs will be treated at both the CRPDC and EQP properties. The actual treatment zone would be refined during the remedial design or the remedial action.

Enhanced Anaerobic Biodegradation (EAB) is assumed to be the technology for in-situ treatment. During the remedial design, based on additional investigation results, other treatment technologies may be considered.

The direct push injections at the CRPDC source area would cover the entire CRPDC property to 65 feet bgs. A groundwater extraction well would be installed at the northern boundary of the property to provide water for the injections. Two clusters of monitoring wells would be installed at the northern portion of the property to monitor the progress of EAB treatment. An amendment that has the characteristics of being easy to distribute and long-lasting would be preferred at CRPDC. At the EQP source area, the recirculation system would consist of one injection well screened in shallow weathered bedrock along the east side of the EQP building within the adjacent police department property parking lot. An extraction well would be installed west of the injection well within the EQP parking lot. The groundwater recirculation would induce a hydraulic gradient to facilitate amendment distribution toward the west. Two monitoring wells screened in shallow bedrock would be installed at the northeast and northwest downgradient edges of the EQP property to assess in situ treatment progress. An amendment that would migrate with groundwater flow and has a high retention capacity in highly weathered bedrock zone would be preferred at EQP. It is assumed that only one round of EAB treatment would be performed.

Methane generated during the EAB treatment could be extracted by the SVE system, or it may travel with groundwater downgradient and would need to be managed and monitored. Monitoring of vertical migration of soil vapor from groundwater to the vadose zone would be considered during RD and EAB treatment.

The effectiveness of in situ treatment would be evaluated by collecting groundwater samples from monitoring wells installed in the target groundwater remediation zones. Sample results from these wells will be reviewed together with monitoring well data from the dilute plume downgradient of the treatment zone in Plume 1 for evaluation of the long-term effectiveness.

EVALUATION OF REMEDIAL ALTERNATIVES

Nine criteria are used to evaluate the different remediation alternatives individually and against each other in order to select a remedy. This section of the Proposed Plan profiles the relative performance of each alternative against the nine criteria, noting how it compares to the other options under consideration. The nine evaluation criteria are discussed below. A detailed analysis of alternatives can be found in the FS.

A comparative analysis of these alternatives based upon the evaluation criteria noted is presented below.

Comparative Analysis of Alternatives

Overall Protection of Human Health and the Environment

All COCs are currently present above the PRGs in at least one medium (soil, vapor, and groundwater). Contaminated groundwater in Plume 1 poses unacceptable human health risks to future residents and workers. Contaminated vapor has the potential to pose human health risks at CRPDC and EQP

buildings due to vapor intrusion. Plume 2 does not currently pose an unacceptable risk to human health; however, the No Action alternative would not be protective of human health and the environment in at the source areas because no action would be taken to remediate or monitor contamination and risk. The No

Action alternative would not meet the RAOs.

Alternatives 2 and 3 would be protective of human health and the environment because they involve active treatment of the vadose zone source areas and monitoring of the natural attenuation of Plume 1 until the RAOs and PRGs are met. Institutional controls would be implemented to restrict future residential use of groundwater at the site until PRGs are met.

Compliance with ARARs

COCs are currently present in groundwater and soils at concentrations exceeding PRGs and thus are not currently in compliance with chemical-specific ARARs. Alternative 1 would not take any active measures to evaluate future compliance with ARARs.

Alternatives 2 and 3 would reach compliance with chemical-specific ARARs through active treatment, natural attenuation, and monitoring. Alternatives 2 and 3 would meet PRGs.

Long-Term Effectiveness and Permanence

Alternative 1 would not be considered a permanent remedy because no action would be implemented to reduce the level of contamination to below PRGs or verify any naturally occurring reduction. Alternative 1 does not provide long-term effectiveness.

Both Alternatives 2 and 3 would permanently reduce contaminant concentrations in the source zones through active treatment. Consequently, contamination in groundwater and vapor would be reduced or eliminated. Alternative 2 would be used to address shallow groundwater. If the PDI or long-term monitoring results reveal higher levels of contamination than expected in groundwater (more than an order of magnitude above the PRGs), active groundwater treatment (Alternative 3) would be triggered. As a result, residual risks are expected to be within EPA's acceptable risk range for Alternatives 2 and 3. Alternatives 2 and 3 would have long-term effectiveness and permanence.

Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative 1 would not reduce contaminant Toxicity, Mobility, or Volume (T/M/V) through treatment. Alternatives 2 and 3 would reduce T/M/V through treatment in the source areas and would achieve the

NINE EVALUATION CRITERIA FOR SUPERFUND REMEDIAL ALTERNATIVES
Overall protection of human health and the environment determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.
Compliance with ARARs evaluates whether the alternative would meet all of the applicable or relevant and appropriate requirements of federal and state environmental statutes and other requirements that pertain to the site, or provide grounds for invoking a waiver.
Long-term effectiveness and permanence considers the ability of an alternative to maintain protection of human health and the environment over time.
Reduction of toxicity, mobility, or volume through treatment is the anticipated performance of the treatment technologies an alternative may employ.
Short-term effectiveness considers the period of time needed to implement an alternative and the risks the alternative may pose to workers, residents, and the environment during implementation.
Implementability is the technical and administrative feasibility of implementing the alternative, including the availability of materials and services.
Cost includes estimated capital and annual operation and maintenance costs, as well as present-worth costs. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.
Commonwealth acceptance considers whether the Commonwealth (the support agency) concurs with, opposes, or has no comments on the preferred remedy.
Community acceptance will be assessed in the ROD and refers to the public's general response to the alternatives described in the Proposed Plan and the RI/FS reports. Comments received on the Proposed Plan are an important indicator of community acceptance.

PRGs. Alternatives 2 and 3 would reduce T/M/V through SVE, DPE, and/or in situ treatment in the source areas, especially the soil contamination that could serve as a source of groundwater contamination. Active treatment in the source areas under both alternatives also is expected to reduce contamination in Plume 1 at the source areas. Alternatives 2 and 3 would achieve the PRGs for groundwater over time. For both Plume 1 and Plume 2, natural attenuation would reduce T/M/V under both Alternatives 2 and 3.

Short-Term Effectiveness

There would be no short-term impact to the community and environment from Alternative 1 as no remedial action would occur. However, this alternative would not meet RAOs within a reasonable time frame. There would be moderate short-term impacts to the local community and workers under Alternative 2 due to the PDI activities and the RA construction and operation at the CRPDC and EQP buildings within the source areas. Both Alternatives 2 and 3 would require that equipment be brought inside buildings to install the SVE and/or DPE system. For both alternatives, a pilot study would be needed to evaluate the zone of influence of SVE/DPE wells. The CRPDC building may need to be modified, and the operation of EQP may need to be shut down temporarily. Alternative 3 would have the greatest short-term impact to the community, impacting the same areas as Alternative 2 in addition to potential disruptions to nearby traffic for injection/extraction/monitoring well installations. For Alternative 3, a pilot study would need to be conducted to obtain design parameters for in-situ treatment. Following removal of the sources, the time frames for Alternatives 2 and 3 to meet the RAOs would be controlled by the rate of natural attenuation of the plumes. In other words, the RAOs in groundwater will be met once the COCs have degraded and/or been dispersed/diluted to concentrations below their respective criteria. Therefore, the overall time frames for Alternatives 2 and 3 are expected to be similar.

Implementability

While all alternatives are implementable, both Alternatives 2 and 3 would need to overcome the challenge of drilling inside CRPDC, which may require modification of the building wall to install a rig. There are locations that may not be accessible for any drilling equipment. There is also the possibility of collecting samples under the building using angled drilling. Drilling at EQP could interrupt the business. . The area surrounding the Site is highly developed with minimal space between above ground structures. For this reason, Alternative 3 would be more difficult to implement since in-situ treatment would require installation of additional injection and performance monitoring wells. Additionally, these wells could interfere with utilities and traffic controls. While horizontal wells are a more innovative technology that could overcome the limitations of installing vertical wells, given the dilute nature of Plume #1 it would be difficult to successfully implement this technology in this setting. Alternative 2 is also more in line with the current conceptual site model for the Site, with a contingency for additional in-situ treatment if new information becomes available during the PDI.

For both Alternatives 2 and 3, services and materials are readily available. However, specialized equipment would be shipped from the U.S. mainland at additional costs. For Alternative 3, amendments for in-situ treatment would also need to be shipped from the U.S. mainland.

Cost

The cost estimates for all three alternatives are provided below.

Groundwater Alternative	Capital Costs	Present Worth O&M Costs	Total Present Worth
1	$0	$0	$0
2	$2,789,000	$ 2,511,000	$ 5,300,000
3	$4,866,000	$ 2,732,000	$ 7,598,000

Commonwealth/Support Agency Acceptance

The PREQB agrees with the preferred remedy in this Proposed Plan.

Community Acceptance

Community acceptance of the preferred remedy will be evaluated after the public comment period ends

and will be described in the Responsiveness Summary section of the ROD for this Site.

PREFERRED REMEDY

EPA, in consultation with PREQB, agrees that the preferred alternative for the Site groundwater is Alternative 2, SVE/DPE, MNA, Long-term Monitoring, Institutional Controls and Contingency for In-Situ Treatment. Based on the evaluation of the data, information currently available, and the comparative analysis, the preferred alternative meets the statutory requirements of CERCLA for protection of human health and the environment under current and projected future land use.

Based on information currently available, the lead agency believes the Preferred Alternative meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. The (name of lead agency) expects the Preferred Alternative to satisfy the following statutory requirements of CERCLA §121(b): 1) be protective of human health and the environment; 2) comply with ARARs (or justify a waiver); 3) be cost-effective; 4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and 5) satisfy the preference for treatment as a principal element (or justify not meeting the preference).

BASIS FOR REMEDY PREFERENCE

The Preferred Alternative is believed to provide the best balance of tradeoffs among the alternatives based on the information available to EPA at this time. EPA and PREQB believe that the preferred remedy would be protective of human health and the environment, comply with ARARs, be cost-effective and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. The preferred remedy also would meet the statutory preference for the use of treatment as a principal element. The preferred alternative can change in response to public comment or new information.

The environmental benefits of the preferred remedy may be enhanced by consideration, during the design, of technologies and practices that are sustainable in accordance with EPA Region 2's Clean and Green Energy Policy. This would include consideration of green remediation technologies and practices.

Figure 1
Potential Source Areas Location Map
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Figure 1. Overview of Site Area, including the three source areas: Cabo Rojo Professional Dry Cleaners (source to Plume 1), Extasy Q Paints (Source of Plume 1) and Pridco East (historical source to Plume 2).

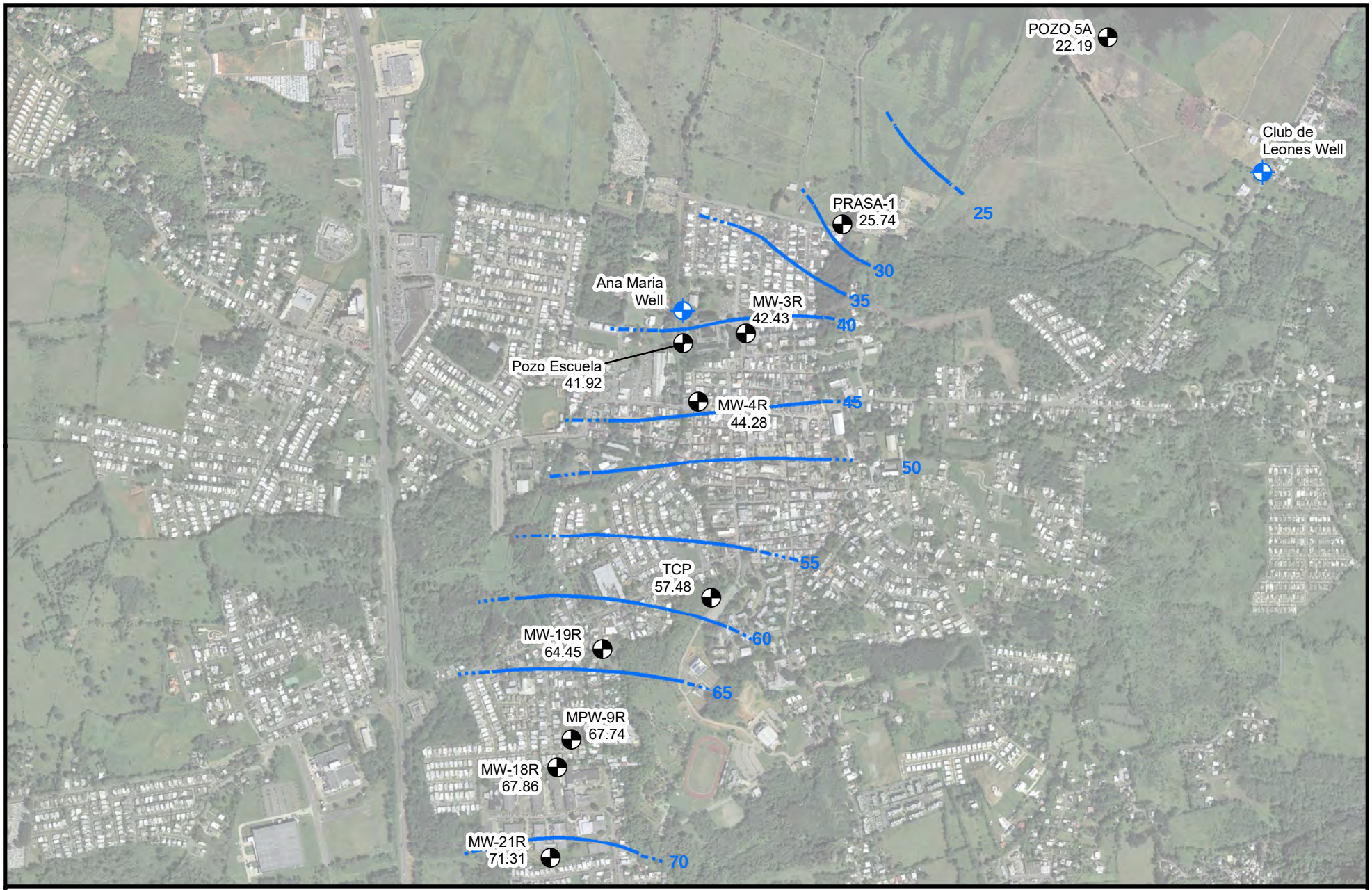


Figure 2
Bedrock Zone Potentiometric Surface Map - Round 2 (5/25/2017)
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Figure 2. Direction of groundwater flow in the bedrock during Round 2 data collection.

USGS-OW1					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
25-35	0.5U	0.5U	0.5U	44	0.17J

MW-16					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
30-40	0.5U	0.5U	0.5U	0.5U	0.25U

Screening Criterion	
Analyte	GW (µg/L)
PCE	5
TCE	5
cis-1,2-DCE	70
1,1-DCE	7
Vinyl Chloride	0.25
1,4-Dioxane	0.46

ANA MARIA					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
75	0.5U	0.5U	0.5U	0.5U	0.25U

MW-1					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
28-38	7.9	1.7	2.5	0.5U	0.14J

POZO ESCUELA						
Port	Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
1	39-59	1.5	0.51	0.55	0.5U	0.037J
2	79.5-86	1.3	0.26J	0.27J	0.5U	0.5U
3	89-96	5.1	0.79	0.68	0.5U	0.5U
4	157-162	0.57	0.5U	0.5U	0.5U	0.5U

MW-2					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
16-26	4.2	1.5	1.9	0.5U	0.11J

MW-15					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
45-55	16	4.2	4.1	0.5U	0.34

MW-4					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
45-55	27	10	44	0.5U	1.2

MW-4R					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
90-100	71	18	18	0.5U	1.2

MW-7					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
30.58-40.58	0.5U	0.5U	0.5U	0.5U	0.25U

MW-19R					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
110-120	0.5U	0.5U	0.35J+	34	0.019J

MW-11					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
22-32	0.5U	0.5U	0.5U	0.5U	0.25U

MW-12					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
17.67-27.67	0.5U	0.5U	0.5U	0.5U	0.25U

MW-10					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
33-43	0.5U	0.5U	0.5U	0.5U	0.25U

PRASA-1					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
105	0.5U	0.5U	0.5U	0.5U	0.25U

MW-3R					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
92-97	1.2	0.68	0.85	0.5U	0.035J

MW-3RS					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
56-66	15	2.2	2	0.5U	0.023J

MW-5						
Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
17-27	0.21U	0.25J	0.25J	0.25J	0.5U	0.5U

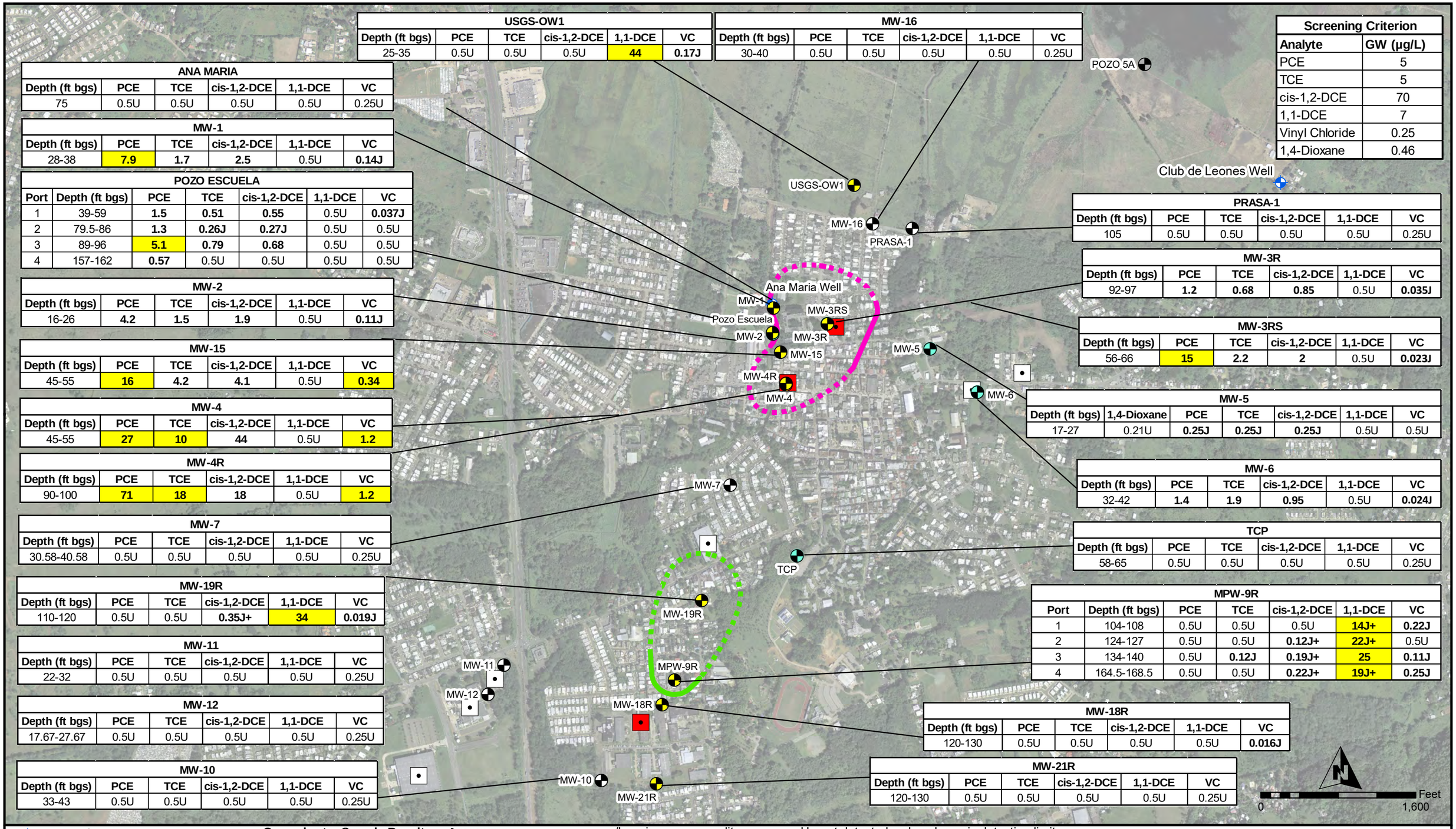
MW-6					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
32-42	1.4	1.9	0.95	0.5U	0.024J

TCP					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
58-65	0.5U	0.5U	0.5U	0.5U	0.25U

MPW-9R						
Port	Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
1	104-108	0.5U	0.5U	0.5U	14J+	0.22J
2	124-127	0.5U	0.5U	0.12J+	22J+	0.5U
3	134-140	0.5U	0.12J	0.19J+	25	0.11J
4	164.5-168.5	0.5U	0.5U	0.22J+	19J+	0.25J

MW-18R					
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
120-130	0.5U	0.5U	0.5U	0.5U	0.016J

MW-21R						
Depth (ft bgs)	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC	
120-130	0.5U	0.5U	0.5U	0.5U	0.25U	



Public Supply Wells
Confirmed Source Area
Former Potential Source Area
PCE plume contour (5 µg/L)
1,1-DCE plume contour (5 µg/L)

Groundwater Sample Results
Detection
Exceedance
Non-Detect
Not Sampled

Acronyms:
PCE - tetrachloroethene
DCE - dichloroethene
TCE - trichloroethene
VC - vinyl chloride
NR - no result

µg/L - micrograms per liter
ft bgs - feet below ground surface
GW - groundwater
DUP - duplicate sample
J+ - estimated value, bias high
J- - estimated value, bias low

U - not detected; value shown is detection limit
Bolded text indicates a detection below screening criteria.
Bolded and yellow highlight indicates a detection at or above screening criteria.
Plume lines are dashed where inferred.

Figure 3
Site-Related Monitoring Well Sampling Results - Round 2
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Figure 3. Round 2 groundwater data showing an outline of Plume 1 (pink) and Plume 2 (green).

Report Prepared on August 2023

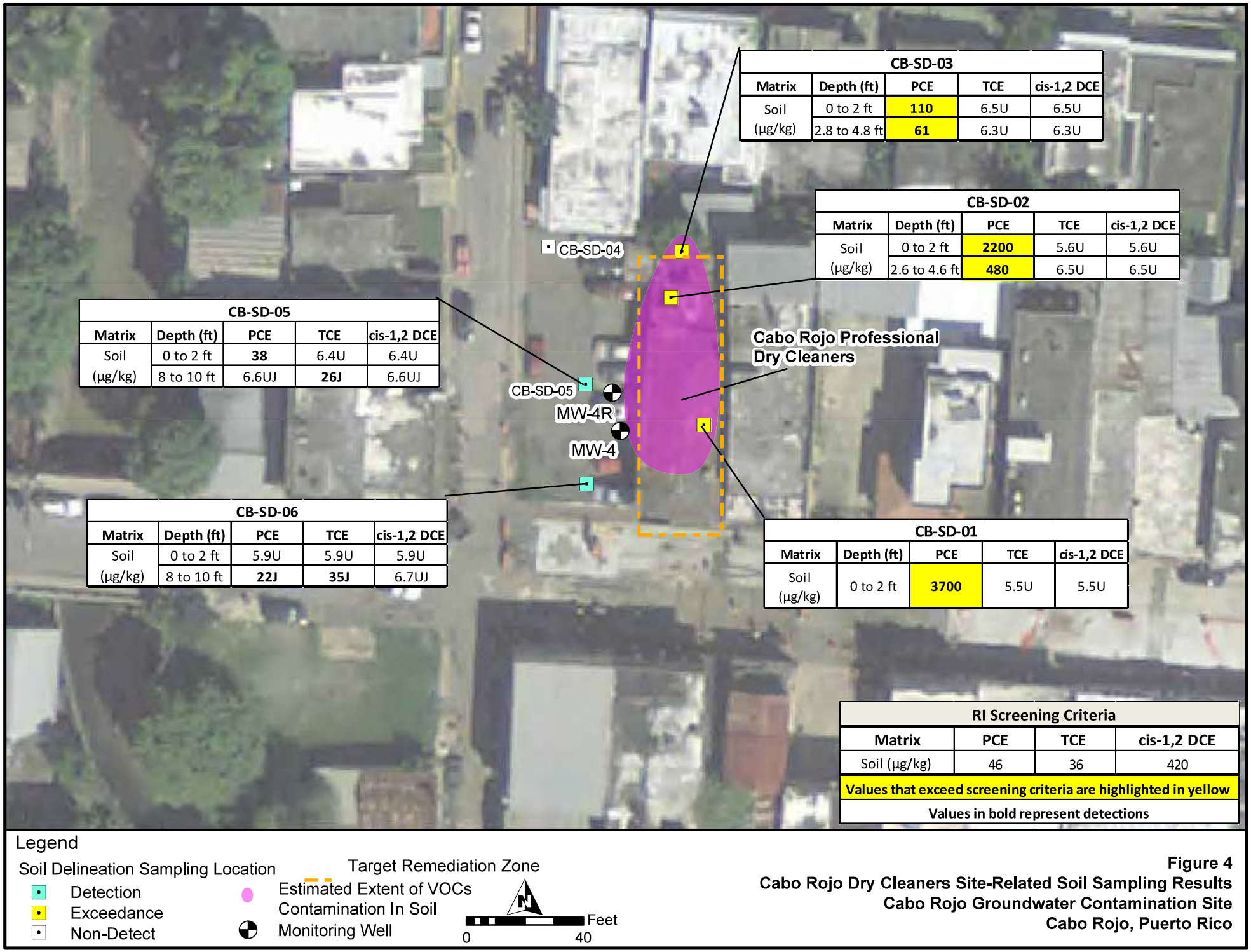


Figure 4
Cabo Rojo Dry Cleaners Site-Related Soil Sampling Results
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Figure 4. Soil sampling results at CRPDC.

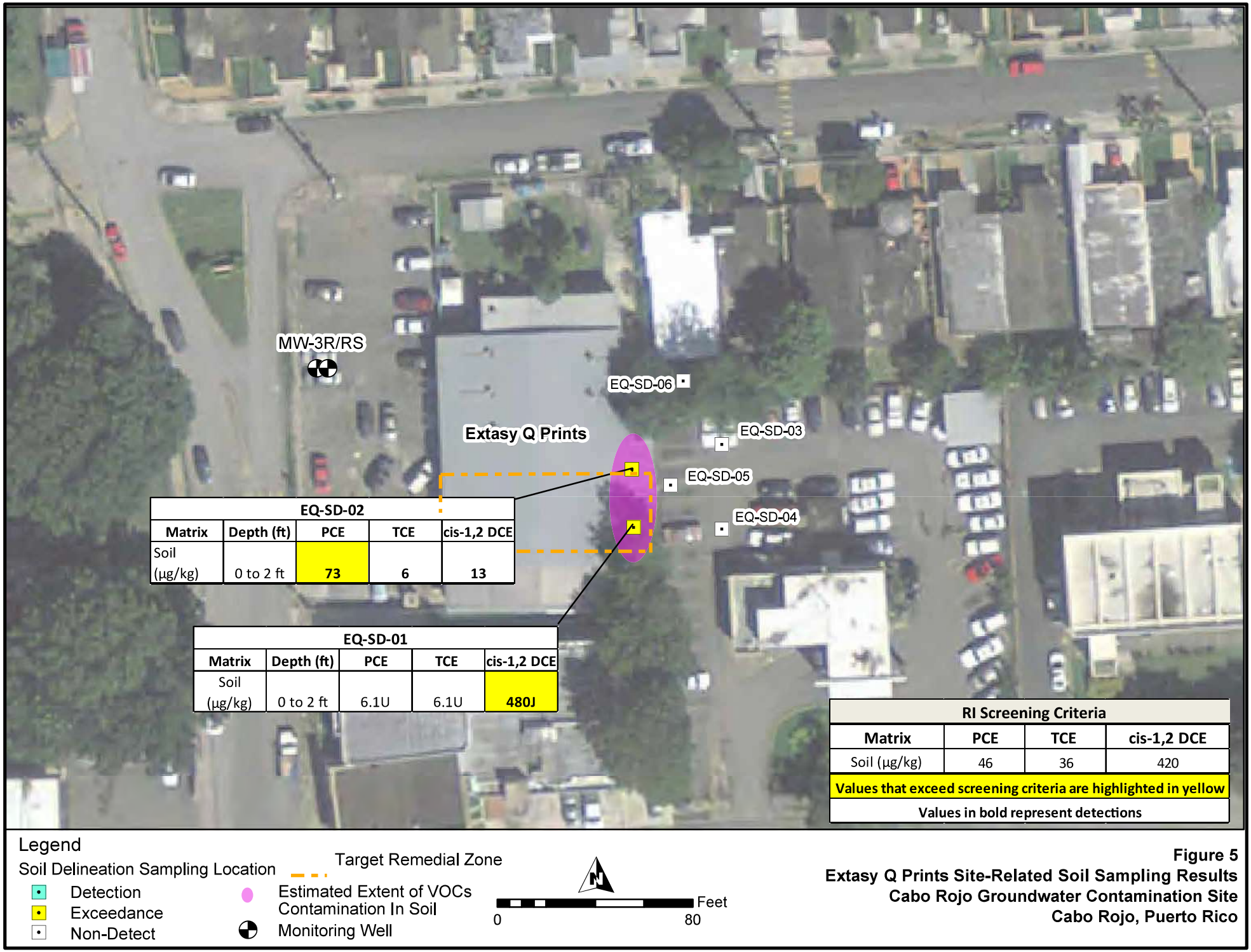


Figure 5
Extasy Q Prints Site-Related Soil Sampling Results
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Figure 5. Soil sampling results at EQP.

Table 1
Comparison of Round 1, Round 2 and Post Maria Round 1 Groundwater/Monitoring Well Sample Detections
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Well ID	Screen or Open Hole Interval (feet bgs)	Sampling Round	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)	1,1-DCE (µg/L)	1,4-Dioxane (µg/L)
Screening Criteria			**5**	**5**	**70**	**0.25**	**7**	**0.46**
Unconsolidated Zone								
MW-1	28-38	Round 1	**27**	**5.8**	**5.7**	**0.83**	0.5 U	2.1 U
		Round 2	**7.9**	**1.7**	**2.5**	**0.14** J	0.5 U	0.2 U
		Post-Maria	**6.1**	**1.1**	**2**	**0.096** J	0.5 U	0.4 U
MW-2	16-26	Round 1	**5.1**	**1.8**	**2.4**	0.5 U	0.5 U	2.0 U
		Round 2	**4.2**	**1.5**	**1.9**	**0.11** J	0.5 U	**0.38**
		Post-Maria	**3.9**	**1.2**	**1.3**	0.54 U	**0.28** J	0.3 U
MW-4	45-55	Round 1	**530**	**140**	**410**	**65**	**1.4**	2.0 U
		Round 2	**27**	**10**	**44**	**1.2**	0.5 U	0.20 U
		Post-Maria	**96**	**35**	**93**	**4.1**	**0.54**	0.3 U
MW-5	17-27	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.1 U
		Round 2	**0.25** J	**0.25** J	**0.25** J	0.25 U	0.5 U	0.21 U
		Post-Maria	NS	NS	NS	NS	NS	NS
MW-6	32-42	Round 1	**3.1**	**5.0**	**6.6**	0.5 U	0.5 U	2.1 U
		Round 2	**1.4**	**1.9**	**0.95**	**0.024** J	0.5 U	**0.28**
		Post-Maria	NS	NS	NS	NS	NS	NS
MW-7	30.58-40.58	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.0 U
		Round 2	0.5 U	0.5 U	0.5 U	0.25 U	0.5 U	0.21 UJ
		Post-Maria	NS	NS	NS	NS	NS	NS
MW-10	33-43	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.0 U
		Round 2	0.5 U	0.5 U	0.5 U	0.25 U	0.5 U	0.20 U
		Post-Maria	0.5 U	0.5 U	0.5 U	0.25 U	0.5 U	0.34 U
MW-11	22-32	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.1 U
		Round 2	0.5 U	0.5 U	0.5 U	0.25 U	0.5 U	0.21 UJ
		Post-Maria	NS	NS	NS	NS	NS	NS
MW-12	17.67-27.67	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.0 U
		Round 2	0.5 U	0.5 U	0.5 U	0.25 U	0.5 U	0.20 UJ
		Post-Maria	NS	NS	NS	NS	NS	NS
MW-15	45-55	Round 2	**16**	**4.2**	**4.1**	**0.34**	0.5 U	0.21 UJ
		Post-Maria	**20**	**5.0**	**4.7**	**0.38**	**0.28** J	
MW-16	30-40	Round 2	0.5 U	0.5 U	0.5 U	0.25 U	0.5 U	0.2 U
		Post-Maria	0.5 U	0.5 U	0.5 U	0.25 U	0.5 U	
Bedrock Wells								
MW-3RS	56-66	Round 1	**17**	**2.4**	**2.1**	0.5 U	0.5 U	2.1 U
		Round 2	**15**	**2.2**	**2**	**0.023** J	0.5 U	0.21 U
		Post-Maria	**17**	**2.6**	**2.1**	**0.032** J	0.23 U	0.3 U
MW-3R (1)	OH 92-97.5	Round 1	**1.1**	**0.78**	**0.97**	0.5 U	0.5 U	2.1 U
		Round 2	**1.2**	**0.68**	**0.85**	**0.035** J	0.5 U	0.20 U
		Post-Maria	**0.99**	**0.59**	**0.62**	**0.032** J	0.5 U	0.4 U
MW-4R	90-100	Round 2	**71**	**18**	**18**	**1.2**	0.5 U	0.2 UJ
		Post-Maria	**56**	**14**	**12**	**0.034** J	0.5 U	0.1 U
MW-18R	120-130	Round 2	0.5 U	0.5 U	0.5 U	**0.016** J	0.5 U	**2.5** J
		Post-Maria	0.5 U	0.5 U	0.5 U	0.5 U	**0.57**	**0.78**
MW-19R	110-120	Round 2	0.5 U	0.5 U	**0.35** J+	**0.019** J	**34**	**8.4**
		Post-Maria	0.5 U	0.5 U	**0.32** J+	0.25 U	**40**	**4.9**

Table 1
Comparison of Round 1, Round 2 and Post Maria Round 1 Groundwater/Monitoring Well Sample Detections
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Well ID		Screen or Open Hole Interval (feet bgs)	Sampling Round	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)	1,1-DCE (µg/L)	1,4-Dioxane (µg/L)
Screening Criteria				**5**	**5**	**70**	**0.25**	**7**	**0.46**
MW-21R		120-130	Round 2	0.5 U	0.5 U	0.5 U	0.25 U	0.5 U	**0.53**
			Post-Maria	0.5 U	0.5 U	0.5 U	0.25 U	0.5 U	0.4 U
MPW-9R	Port 1	104-108	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	**34**	**4.6**
			Round 2	0.5 U	0.5 U	0.5 U	**0.22** J	**14** J+	**5.00** J-
			Post-Maria	0.5 U	0.5 U	0.5 U	**0.15** J	**16** J+	**7.0**
	Port 2	124-127	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	**53**	**4.8**
			Round 2	0.5 U	0.5 U	**0.12** J+	0.5 U	**22** J+	**7.90**
			Post-Maria	0.5 U	0.5 U	0.5 U	**0.087** J	**21**	**5.7**
	Port 3	134-140	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	**58**	**4.4**
			Round 2	0.5 U	**0.12** J	**0.19** J+		**25**	**9.30**
			Post-Maria	0.5 U	**0.13** J	0.5 U	**0.059** J	**25**	**6.6**
	Port 4	164.5-168.5	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	**47**	**3.1**
			Round 2	0.5 U	0.5 U	**0.22** J+	**0.25** J	**19** J+	**5.80**
			Post-Maria	0.5 U	0.5 U	**0.21** J+	**0.28**	**30** J+	**4.7**
Pozo Escuela	Port 1	39-59	Round 1	**1.2**	0.5 U	0.5 U	0.5 U	0.5 U	2.0 U
			Round 2	**1.5**	**0.51**	**0.55**		0.5 U	**0.63**
			Post-Maria	**1**	**0.33** J	**0.35** J	**0.023** J	**0.31** J	**0.13** J
	Port 2	79.5-86	Round 1	**4.1**	**1.4**	**1.5**	0.5 U	0.5 U	2.0 U
			Round 2	**1.3**	**0.26** J	**0.27** J	0.5 U	0.5 U	**0.65**
			Post-Maria	**0.61**	**0.15** J	0.5 U	0.25 U	**0.25** J	**0.27** J
	Port 3	89-96	Round 1	**1.3**	0.5 U	0.5 U	0.5 U	0.5 U	2.0 U
			Round 2	**5.1**	**0.79**	**0.68**	0.5 U	0.5 U	**0.30**
			Post-Maria	**0.57**	**0.16** J	**0.14** J	0.25 U	**0.23** J	**0.17** J
	Port 4	157-162	Round 1	**1.7**	0.5 U	0.5 U	0.5 U	0.5 U	2.1 U
			Round 2	**0.57**	0.5 U	0.5 U	0.5 U	0.5 U	**1.20**
			Post-Maria	**0.83**	**0.17** J	0.5 U	0.25 U	0.5 U	**0.14** J
Other Wells									
PRASA-1 (2)		OH 112.5	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
			Round 2	0.5 U	0.5 U	0.5 U	0.25 U	0.5 U	0.20 U
			Post-Maria	NS	NS	NS	NS	NS	NS
Ana María (3)		OH 40-105	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
			Round 2	0.5 U	0.5 U	0.5 U	0.25 U	0.5 U	**0.93**
			Post-Maria	**0.43** J	**0.11** J	**0.17** J	**0.012** J	**0.4** J	0.34 UJ
TCP		OH 58-65	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
			Round 2	0.5 U	0.5 U	0.5 U	0.25 U	0.5 U	**0.18** J
			Post-Maria	NS	NS	NS	NS	NS	NS
Pozo 5A		unk; 163	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
			Round 2	NS	NS	NS	NS	NS	NS
			Post-Maria	NS	NS	NS	NS	NS	NS

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Screening Criteria			**5**	**5**	**70**	**0.25**	**7**	**0.46**
USGS-OW-1	25-35	Round 1	0.5 U	0.5 U	0.5 U	0.5 U	**29**	NA
		Round 2	0.5 U	0.5 U	0.5 U	**0.17** J	**44**	**0.86**
		Post-Maria	NS	NS	NS	NS	NS	NS

(1) MW-3R has surface casing set at 92 feet bgs. The borehole collapsed back to 97.5 the day after drilling and has remained stable.

(2) open hole interval unknown

(3) Drilled to 200 feet bgs; collapsed to 105 feet bgs

Abbreviations:

DCE - dichloroethene

NA - not applicable

NS - not sampled

OH - open hole

unk - unknown

µg/L - microgram per liter

Compound detected

Compound exceeds screening criterion

PCE - tetrachloroethene

TCE - trichloroethene

TCP - Terminal de Carros Públicos

U - not detected

J - estimated

J+ - estimated, biased high

PUBLIC MEETING
CABO ROJO GROUNDWATER CONTAMINATION SITE
CABO ROJO, PUERTO RICO
AUGUST 9, 2018
CABO ROJO, PUERTO RICO

Transcript Notes:
Time Scheduled: 6:00 pm
Place: Rebeca [sic] E. Colberg Library

The record was opened at 6:00 pm.

Brenda Reyes: Good evening. For purposes of this meeting, we are preparing a transcript. So, we're going to open the meeting. My name is Brenda Reyes Tomassini, public affairs specialist with the United States Environmental Protection Agency. With me tonight are Daniel Rodríguez, an engineer, who is the project manager; and Frances Delano, from CDM; and Brendan MacDonald, who is about to come in, also from CDM. Tonight, we're here, at the Blanca Colberg Library in the town of Cabo Rojo, to present the Proposed Plan to remedy the groundwater contamination at the Superfund Site known as the Cabo Rojo Groundwater Wells. This Proposed Plan describes the remedial alternatives for the Superfund Site and identifies the preferred alternative and the rationale for the chosen alternative. The United States Environmental Protection Agency has an Information Repository with the Site documentation here, at the Blanca Colberg Library. It has one at the Region 2 EPA office in New York. It has one at our Caribbean office in Guaynabo; the United States Environmental Protection Agency, Caribbean Division, has an Information Repository there. We're in the public comment period. The announcement was published in the Primera Hora Newspaper; I believe the announcement was published last week, on August 2nd. It was published in the Primera

Hora Newspaper. So, tonight, my colleague Daniel Rodríguez will be making a presentation. We're going to wait 15 minutes to see if anyone else comes in. Tonight, you can submit your comments in writing. We have maps for you to see. The meetings are extremely interactive, so, we'd like to give you a warm welcome.

A 15-minute break was taken at 6:03 pm.

The record was reopened at 6:15 pm to officially start the meeting.

Brenda Reyes: Ok, now we're really starting. Good night to those who've just come in. My name is Brenda Reyes, public affairs specialist of the United States Environmental Protection Agency, the EPA. With me tonight is my colleague, the engineer Daniel Rodríguez, who is the project manager for the Cabo Rojo Groundwater Wells Superfund Site. Tonight, we'll be presenting the Proposed Plan and the alternatives that were developed for this Superfund Site and the preferred alternative to remedy the contamination at the site. With me tonight are Brendan MacDonald, from CDM; Frances Delano, from CDM, who are the contractors; [and] Ms. Gloria Toro, from the Environmental Quality Board/Department of Natural Resources. With that, we begin the meeting. I would like to remind you that we're in the public comment period. The documents are here at the Blanca Colberg Library. They're at the United States Environmental Protection Agency, our office, the EPA, in Guaynabo, [and] at the Records Center of the Superfund Program in New York, in Region 2 in New York, for those who live outside Puerto Rico. Public participation is really important. The EPA Superfund Program largely depends on your... the public's participation. We offer these spaces for participation. You come in, review the documents, [and] you can submit comments. These

meetings tend to be quite interactive after the presentation. We have maps. If you would like to make your comments here verbally, we'll also give you the microphone, we have transcription. So, well, you can submit your comments and any other concern through the microphone or in writing. We're in the public comment period. So, without any further ado, Danny, it's all yours.

Daniel Rodríguez: Good evening, everyone. Tonight, we're going to be talking about the plan we developed to remedy the groundwater contamination in Cabo Rojo.

(Stenographer's Note – Switched to Slide 2: Agenda)

As my colleague said, my name is Daniel Rodríguez. I'm the project manager. Ms. Brenda Reyes is the community affairs... community involvement coordinator, and we also have—although I don't know if he has come tonight—the project manager Pascual Velázquez García, who works for what was once the Environmental Quality Board and, I believe, is now the Department of Natural and Environmental Resources.

(Stenographer's Note – Switched to Slide 3: Agenda)

Tonight, we're going to present the process of the Superfund Program, which is the one that is governing or is being followed for the cleanup, investigation, and remediation of the contamination that was found in the groundwater. We're going to talk about the results of the remedial investigation and we're going to present the remedial alternatives and the preferred remedy chosen to address the contamination in Cabo Rojo.

(Stenographer's Note – Switched to Slide 4: Superfund Process)

What the Superfund Program does is address contamination, contaminants that leak into groundwater... to address the threat to human health and the environment posed by such contamination. It has two aspects, two components. One is removal actions, which are short-term. These immediately address the problem that the contamination presents. They are intended to reduce or eliminate the contamination. The other component, which is the component I work on, is remedial action. That's more long-term. That's where we do the investigations, we form an idea of what the problem is, what the nature of the contamination is, and we find a solution to the contamination that is present.

(Stenographer's Note – Switched to Slide 5: Site Assessment Phase)

Here, you see the various phases. The site was discovered. In Cabo Rojo, the Puerto Rico Aqueduct and Sewer Authority found, during their sampling of their water sources, that there was contamination with chlorinated volatile organic compounds in the water, in the wells they were using. They presented that problem to us. The EPA and the Environmental Quality Board started the process of the preliminary assessment of the site. We went and gathered all available information to identify what could be the possible and potential sources of contamination. After that, we conducted the site investigation. This investigation was conducted with the information we already gathered, a... we went and investigated those sources and started reducing the area, trying to define the extent of the contamination. After that step, we made a mathematical calculation, which is the Hazard Ranking System, the instrument we used to propose it for inclusion on the Superfund list. If the site has a classification or score over 26 or 28, it is then eligible for the Superfund list. In the case of Cabo Rojo, it was listed on March 10, 2011. Once it was

listed on the Superfund Program, my program came in and we started the remedial investigation and the studies to determine the extent... the nature of the contamination and the extent of that nature [of the contamination] to develop a plan or remedy that will address the contamination. The goal is always the same: reducing or eliminating the risk to human health and the environment.

(Stenographer's Note – Switched to Slide 6: Remedial Investigation/Feasibility Study)

This is more of what I've already explained.

(Stenographer's Note – Switched to Slide 7: Site Description)

The site is located here in the Bajura Ward, but rather close to the town center of the Municipality of Cabo Rojo. It consists of the Puerto Rico Aqueduct and Sewer Authority (PRASA) system, which is six wells that they had, that are in operation, that were active at the time, from 2002 to 2006—and I believe they removed the well, one of the wells that was in use—and they found contamination in three of them. One is Hacienda Margarita, the other one is Club de Leones, and the Ana María Well that is close to the school. They did not detect contamination in the other four [sic] wells, Cabo Rojo 1, 2, and 3. I would like to add a caveat here; I would like to clarify that, although PRASA found contamination in those wells, none of the wells showed contamination above the levels of the Puerto Rico and federal governments, what we call the MCL, "Maximum Contaminant Level."

(Stenographer's Note – Switched to Slide 8: Location Map)

That's the area. The wells that appear in, like, orange, those are the wells where chlorinated volatile organic compounds were detected. They were not detected in the other ones.

(Stenographer's Note – Switched to Slide 9: Location Map)

The site is defined by the possible sources that contributed to the contamination present in the groundwater. From 68 sources that we started investigating, it was reduced to five before the remedial investigation began; and after conducting the remedial investigation, it was reduced to three. These are: Cabo Rojo Professional Dry Cleaners, which is nearby, in the town center; Extasy Q Print, which is over there behind the library, right near here; and Puerto Rico Industrial Development Company (PRIDCO), their industrial complex... their industrial park east of PR-100.

(Stenographer's Note – Switched to Slide 10: Historical Background)

To give you a little more information about the historical background, even though I've been touching upon it while I've been discussing the other sites, as I said before, PRASA, during their regular monitoring, detected those volatile organic compounds in the water. In 2006, the EPA started conducting the preliminary investigation of the site and we started looking for these potential sources that could have contributed to the contamination. Like I said, we started out with 68 sites. Samples were taken at all of them; the investigation work was carried out: soil gas samples, soil samples, groundwater samples of what already existed at the site. It was included on the National Priorities List in 2011. From 2013 to 2017, we started doing the remedial investigation work—that's the

part in which I participated more actively—and in 2018, we completed the remedial investigation and the feasibility study. The feasibility study presents the alternatives to remedy the contamination in the body of water.

(Stenographer's Note – Switched to Slide 11: Fieldwork during RI)

The bulk of the investigation work, of the fieldwork, was conducted from 2013 to 2014. We collected soil gas samples, we collected soil samples around these factories we had identified as possible sources, which were five. In addition to the three that I've already mentioned—Cabo Rojo Professional Dry Cleaners, Extasy Q Print, and PRIDCO East—there was also D'Elegant Dry Cleaner, which was a commercial complex. It was where Walgreens is now. There used to be a Chinese restaurant, a bakery, a video club, a beauty and nails salon, etc., etc., there, but that building was torn down, it was destroyed, and they built what is there now, which is the Walgreens and two commercial units at the back. One is vacant and the other one is the Chinese restaurant. Samples were collected at those sites, for these parameters. The groundwater was investigated. Wells were installed, samples were collected, the water levels were measured to determine the groundwater flow [direction] in the area under investigation. In addition to that, we took surface water and sediment samples from the streams around the site where the contamination was found. In 2017, we went back out to the field because we detected there was data that we did not have and we had to complete it in order to further define and refine the extent of the contamination. We repeated a vapor intrusion study that had been conducted... had been carried out in 2011 in 29 residential and commercial structures in the area around where we are right now, in the town center. It was repeated

to see if there had been any change since 2011. Soil samples were collected. Other wells were installed close to the area where we determined we didn't have data to define the plumes of contamination that might be in the area.

(Stenographer's Note – Switched to Slide 12: Photos)

This is part of the work that was carried out. One of the wells that was installed close to Cabo Rojo Professional Dry Cleaners, on a lot, like, for car parking. The photo on the right is of one of the canisters that was placed close to Extasy Q Print to collect the concentration of any volatile organic compound in the air, environmental. The other one is the well that was installed in the small park close to the school and the stream. The one on the right is one of the houses where we placed the container to sample the gases that are underground. We perforated the floor, placed a tube, and collected the sample. And inside the house, environmental. This is part of the work that was done.

(Stenographer's Note – Switched to Slide 13: Remedial Investigation (RI))

The remedial investigation detected PCE in soil, which is tetrachloroethene, trichloroethene (TCE), and cis-1, 2 dichloroethene (DCE) at Extasy Q Print and Cabo Rojo Professional Dry Cleaners. They were detected in the soil, in the soil samples taken around the building. At Cabo Rojo Professional Dry Cleaners, it was PCE, which is tetrachloroethene, which was above the agencies' screening levels. We found concentrations from 22—which is below the number—to 3700 micrograms per kilogram. At Extasy Q Print, PCE was in the 73 range, above the screening levels, and DCE was

at 480. At PRIDCO, we didn't find... we didn't detect contaminants above the screening levels in the soil when we did the investigation.

(Stenographer's Note – Switched to Slide 14: Map)

This is the area surrounding Cabo Rojo Professional Dry Cleaners. The small squares—and I know you can't read the numbers, even though we gave you a copy or you can obtain a copy of the Proposed Plan—are the numbers that exceeded the [screening] criteria levels that we have, that we had established for the site. The magenta-colored area is what we believe could be the area of concern underneath the building, because of leaks that occurred. That hasn't been defined yet. It'll be done in the future.

(Stenographer's Note – Switched to Slide 15: Map)

At Extasy Q Print, there were two areas where the employees, when we did the preliminary investigation of the site, told us they washed the screens they use to print t-shirts and towels and things they're hired to do, and they exceeded the [screening] criteria numbers we had established for that site.

(Stenographer's Note – Switched to Slide 16: Remedial Investigation)

Regarding soil vapors, TCE was detected above [the levels], from .27 micrograms per cubic meter to 240,000 micrograms per cubic meter in that area between Cabo Rojo Professional Dry Cleaners and Extasy Q Print. The highest detection was at Cabo Rojo Professional Dry Cleaners. The highest detection of tetrachloroethene was at Extasy Q Print, with a concentration of 110 micrograms per cubic meter.

(Stenographer's Note – Switched to Slide 17: Remedial Investigation)

Basically, the results of the groundwater. The data showed that there are two plumes. Instead of just one area, there are two areas where contamination was found in the groundwater. Plume 1 consists mostly of PCE, TCE, and DCE, and vinyl chloride. It's the one that's close to this area where we are right now, between Extasy Q Print, Cabo Rojo Professional Dry Cleaners, and the Ana María Well. Plume 2 consists of 1,1-DCE and 1,4-dioxane, and it's to the north of the PRIDCO facility in the east.

(Stenographer's Note – Switched to Slide 18: Map)

Basically, the two areas are outlined here. What we believe could be the two plumes. You have the data in the report. You can find this information in the remedial investigation report and in the feasibility study report. All this is included in great detail in those documents.

(Stenographer's Note – Switched to Slide 19: Remedial Investigation)

No contamination was detected in the bodies of surface water or in the sediments in relation to the site. We investigated to follow-up on those chemicals, which are the ones that are related to the contamination of groundwater because of the leak that occurred in those potential sources of contamination.

(Stenographer's Note – Switched to Slide 20: Ecological Risk Assessment)

A preliminary risk assessment was conducted and we did not find that there was any risk on return [sic] because of the contamination that was leaked into the groundwater. So, we did not find an ecological risk.

(Stenographer's Note – Switched to Slide 21: Human Health Risk Assessment)

In the human health risk assessment, we assessed the risk of the two plumes. it was determined that plume number 1, which is the one in this area, exceeds all acceptable EPA ranges for exposure for people working in these buildings... at these sites where the contaminant high concentration is found, and the homes surrounding the site where the plume is located. That's for cancer risk. For non-cancer risk, we have a value of 1, and it was determined that the value was much higher, the calculated one. The numbers are in the table. They're also included in the documents that are part of the repository and the administrative record for the site. For plume 2, we found no risks that were above the range established by the EPA either for carcinogen or non-carcinogen. But the detected value of 1,1-DCE was above the values of the water quality levels of the Puerto Rico and federal governments. Therefore, it was decided that action must also be taken in relation to that plume, to plume number 2.

(Stenographer's Note – Switched to Slide 22: Proposed Plan)

What is the Proposed Plan? In the Proposed Plan, we identified the actions to address that contamination. We are providing this forum for people to make comments, to find out about the work that assisted [sic] and where we're going with the work that has been done. We opened a public comment period that began on August 2nd and will be in effect

until September 3, 2018. We are presenting the alternative that the environmental agencies—in this case the EPA and the [Puerto Rico] Environmental Quality Board—are presenting to address the contamination.

(Stenographer's Note – Switched to Slide 23: Remedial Action Objectives)

From the remedial investigation, it was determined that we must take action in relation to the soil and groundwater [contamination]. This is done to address the risk to human health and the environment. Certain remedial action objectives are established, which are the ones that guide the work that will be carried out. In relation to the soil, a remedial action objective was established to prevent the contaminated soil from serving as a source of contamination for the groundwater; in other words, from continuing to contribute contaminants to the groundwater. To prevent and/or minimize the contaminated soil from serving as a source of vapor intrusion now or in the future. The first, groundwater, is more for the future. In relation to the groundwater, the objective is to prevent human exposure to groundwater that is contaminated in concentrations higher than the preliminary remediation goals, than the levels that were established to discern whether or not there is contamination and whether it poses a risk to human health. To restore groundwater to drinking water quality. In other words, superior to [sic] the maximum contaminant levels established by the regulations of the Puerto Rico and federal government agencies. To prevent and minimize contaminated groundwater from serving as a source of vapor intrusion now and in the future; in other words, [preventing] the groundwater from being used as a means to transport the contamination and, in turn, through vapor intrusion, from reaching us and affecting our health, in our homes and in our workplaces.

(Stenographer's Note – Switched to Slide 24: Summary of Remedial Alternatives)

There are common elements to all remedial programs, which we identify because they'll be the same for all the remedial actions that we'll take, except for one, the one of no action. No action means that we do absolutely nothing.

- In all of them, we have a component of investigation, pre-design, and pilot study, where we gather more data to refine the proposed remedy in order to implement it.
- Institutional controls, which are the mechanisms we use, not in terms of engineering but rather regulatory, to prevent people from being able to extract and use the water where the contamination is found.
- Long-term monitoring. We'll be doing monitoring during the remediation that is established to make sure that the contamination in the groundwater is being addressed, whether by reducing the concentrations or eliminating the contamination so that it will reach levels that do not pose a health risk.
- Site restoration.

These are some of the most significant components. There are also other components, such as using green remedies, remedies that are more environmentally friendly, doing the five-year reviews to see if the remedy is meeting its objectives.

(Stenographer's Note – Switched to Slide 25: Remedial Alternative No. 1)

Remedial alternative 1—we have this at all sites—is something that the National Contingency Plan of the Superfund Program requires, which is no action. No action—to

see if it's a feasible option. We do absolutely nothing. In this case, it's not, because the risk assessment studies already determined that there's a risk and we have to address it, but it's always considered.

(Stenographer's Note – Switched to Slide 26: Remedial Alternative No. 2)

Alternative number 2 is soil vapor extraction and dual-phase extraction, monitored natural attenuation, and a contingency for in-situ treatment, if necessary, and institutional controls. That's alternative number two. There, the Proposed Plan is to extract very aggressively and impact both phases: the soil phase and the groundwater phase adjacent to where the contamination was found. Do you remember that figure with the two structures that have contamination and were identified in magenta? This kind of remedy will be implemented in those areas to address the contamination there and prevent it from continuing to spread in the groundwater. It also provides for long-term monitoring to see if what we're implementing is being effective, that it's not changing, that the levels of contaminants in the groundwater are decreasing as projected. It doesn't actively include the contingency plan, the in situ-treatment. When the pre-design investigation phase and the part of the pilot project, the pilot study, are carried out, that's when we'll have a better idea of whether this remedy by itself will be able to address the contamination. If it does not address it, we'll then have to activate the in situ-treatment contingency plan. Another possibility is that we implement this and don't see a significant reduction in the contaminant levels. We'll then have to modify it and activate the contingency plan, and the institutional controls, which are placed at the site and aren't removed until the

contaminant levels fall below the levels for drinking water of the Puerto Rico and federal governments.

(Stenographer's Note – Switched to Slide 27: Remedial Alternative No. 2)

I didn't tell you the cost of alternative number one. The cost is zero because we don't do anything. In alternative number 2, we estimate that the cost will be around 5.3 million. The implementation will take about two and a half years, and we expect to meet the remedial objectives in 30 years or less.

(Stenographer's Note – Switched to Slide 28: Remedial Alternative No. 3)

Alternative number three is basically the same thing we were saying in relation to soil vapor and dual-phase extraction, but this alternative does contemplate active, in-situ treatment, not only of the areas close to the sources, but of the entire plume that's contaminated. It assumes that the technology that will be used is enhanced anaerobic biodegradation. This is what we're assuming at this time. It could happen that, when we do the investigative pre-design study and run the pilot study, we have to use a different technology. For this purpose, evaluating this alternative, we assumed that one.

(Stenographer's Note – Switched to Slide 29: Remedial Alternative No. 3)

The same thing. It's a long-term monitoring program to make sure that it shows a reduction trend and institutional controls. The estimated cost of this alternative 3 is approximately 7.6 million. Implementing it will take 4-5 years. And the same objective: we expect to reach the site remediation objective in 30 years or less.

(Stenographer's Note – Switched to Slide 30: Evaluation of Remedial Alternatives)

All these alternatives, while we're evaluating them, have to meet these criteria. They're these nine criteria:

- Overall protection of human health and the environment, which is the foundation of the program
- Compliance with state, federal, and local regulations, if any
- Long-term effectiveness and permanence; in other words, that it was reduced... the risk was eliminated or the risk was reduced to acceptable levels
- Reduction of toxicity, mobility, or volume through treatment
- Short-term effectiveness
- Implementability
- Cost
- State acceptance; in this case, the Commonwealth of Puerto Rico
- Community acceptance; that's why the community is given the opportunity to evaluate the Proposed Plan for the remediation of the site

(Stenographer's Note – Switched to Slide 31: EPA Preferred Remedy)

The remedy preferred by both regulatory agencies—in this case, the EPA and the newly created agency, the Department of Natural and Environmental Resources/Environmental Quality Board—agree that alternative 2 will meet the objective. This is the one we're presenting to this group tonight and the one we're identifying in the Proposed Plan that was published in the various repositories that we have so that the public can review it.

(Stenographer's Note – Switched to Slide 32: EPA Preferred Remedy)

We believe that:

- It protects human health and the environment
- It meets all applicable or relevant and appropriate requirements (ARARs)
- It's cost-effective

(Stenographer's Note – Switched to Slide 33: Next Steps)

Next steps:

- We're asking the public for comments.
- We're going to prepare a Record of Decision (ROD), but not before we can review all the comments we receive and address them. We're going to answer them. They'll be part of the administrative record.
- The public has until September 3rd to send us those comments.

All this information is on the page that the EPA posted for the Cabo Rojo site. I'm trying to see if we can... *(Stenographer's Note – Daniel Rodríguez tried to access the EPA webpage)* Let me stop the presentation here for a minute to jump over to the other one, so that you can see.

Person from the audience: Do we send the comments to that email address?

Daniel Rodríguez: No, I'm going to show you where you can send the comments in a bit. Let me see if I can jump over to the other one. This is the page for the site where you can find all the information related to the contamination here, in Cabo Rojo. You can find the Proposed Plan here. Just click here and you'll find it. All the documents are here. They're in the administrative record, all the studies that have been conducted so far, the reports, the documents... they're all here. If you want more information, you can find it here directly. You'll see all the data that has been gathered and all the studies that existed, all the studies we used to reach the conclusion of the design of that remedy or to propose the remedy. I'm going to go back to where I was. *(Stenographer's Note – He is referring to the presentation slide, as he left the presentation to show the webpage)*

(Stenographer's Note – Switched to Slide 34: Send Comments)

Here's where you can send the comments. You can send them to my email. You can also send them by regular mail to the address on the screen. If you have any questions, you can also call me. All this information is included in the Proposed Plan, and I believe there are copies outside that you can take.

That's all I have for tonight. You may come up if you want to make any comments. We have the people who will be keeping the record of the meeting here, and the comments will be part of the administrative record.

Yes. We have a microphone here up front.

Manuel Sepúlveda: Good afternoon; actually, good evening, everyone. My name is Manuel Sepúlveda. I'm a resident and I work in the town center, very close to one of the places that have been identified as impacted by the contamination. Beyond that, I'm a layman when it comes to science. I believe we have to rely on the information you've been collecting for years and your conclusions. I'm not here to question that and, as a citizen, I'm not going to make any comments because I don't have the competence or standing to question what you've gathered as scientific evidence. But, as a citizen, what would I have to take into consideration to make a specific comment about this plan? Based on my cursory reading, you say that you have to impact the structures to build the facilities to do the extraction of gases, subsoil, etc. etc. How would we be affected by that kind of operation beyond the movement of traffic, which I see will be blocked for a period of time? But, how would the building of these facilities harm the citizens? That's what I would like to know, so that I can express an opinion about it. Because, as I said, I'm not going to question the science and the conclusions you have presented this afternoon are shocking.

Daniel Rodríguez: Thank you, thank you very much. As you very well mentioned, the impact will be minimal, because we have to meet all the requirements of the regulations for the control of atmospheric quality. It'll have its controls. There won't be gas emissions

that will be harmful to the citizens because the purpose of this is to reduce and eliminate the risk, not add the risk from one environment to another. There will be an impact, yes, when they're installing the equipment on the various structures to address the contamination. Traffic may be affected, whether it be vehicle or pedestrian traffic. The operation of these businesses where we're going to place the equipment will be impacted, but I believe there won't be an impact on public health because we're going to include measures to prevent that from happening.

Elaine Rivera: Good evening, my name is Elaine Rivera. I'm a resident here in Joyuda. I have a number of questions like, for example, you say that there's an imminent risk of cancer. Based on what you're saying, if we look at the diagram, it's a very broad population that they have there. Then, I see that it's 30 years to implement all these measures. I know that at a certain point you mentioned that you would do certain things, like perhaps give guidance to the community, prevent people from drinking from the groundwater, but I, like, don't see very clearly, maybe I need more time to read it, but what will be the measures to mitigate the exposure of the people around the area of the plume? I have other questions, but I don't know if you could answer [this one].

Daniel Rodríguez: Let me answer that one quickly. Right now, there's no risk to human health because short-term measures were taken, in which the wells... As I mentioned at the beginning, none of the wells that the Puerto Rico Aqueduct and Sewer Authority uses presented contamination above the maximum water quality levels. It was only detected and that was enough for them to alert the environmental protection regulatory agencies for us to take action, instead of us taking action after it got to the consumers. The

Department of Health establishes certain parameters and the Aqueduct and Sewer Authority has to meet them. So, they alerted us. So, the only well that was very close to reaching the maximum number was removed from the system. We have been monitoring that well over time and the contamination levels presented in the extraction wells don't even reach half of the minimum number established in the regulations. Let me go one step further. In terms of contamination from soil vapors, the vapor intrusion studies we conducted did not determine that any of the structures we visited and took samples from exceeded the numbers that pose a health risk, except for two sites where the contamination is found, where we believe it originated, where one of the sources is located. At those sites, it was indeed determined that the contamination was above the [screening] criteria for residential use, yet below the criteria for workers. So, if it's used for that purpose, it does not pose a risk to public health. In that case, we make some time estimates. A person living in a home [in that area] spends more time [there] and is therefore more exposed to those gases than a person who works there for eight hours, five days a week. So, we believe that the contamination, the problem, is under control. There shouldn't be any exposure right now. This is long-term, for the future. We can't leave it like that because the levels are above what we call the screening levels. We therefore have to take action to lower it and prevent that from posing an unacceptable health problem for the population.

Elaine Rivera: Another question. In your plume, it was really very specific where you found levels, not all the people who are in the plume are at that risk.

Daniel Rodríguez: Exactly.

Elaine Rivera: Rather, it's where you determine that the contamination may be and where you have to act.

Daniel Rodríguez: Exactly, that's what we estimate to be the extent of that plume.

Elaine Rivera: Then, I have another question and it's that you're mentioning certain businesses, right? In this case, you mention some and then others, and I was wondering, what restrictions or controls—if those businesses are operating—are you taking against these operations to prevent it from continuing, or certain practices to prevent this contamination from happening again or to control it?

Daniel Rodríguez: The controls are established by the regulatory agencies in this case, as to how they must manage the materials and manage the waste they produce. There were leaks at those two businesses. What caused the leak? One of them closed down, it's no longer there, it shut down, which was the laundry. Extasy Q Print is still operating, but we haven't seen an increase in the contamination. So, we believe that they—perhaps when they saw the regulatory agencies taking action, collecting samples—well, became concerned and appropriately and adequately managed how they handled that waste. That's what I believe. There are mechanisms that exist in the regulatory field—not in this one where I work—to prevent those things from happening, but it largely depends on the operators of these businesses.

Elaine Rivera: At the same time, we're wondering what those [mechanisms] really are. Because we see all the work this will take; well, at the same time, you mentioned that a first phase would perhaps be controlling as such, preventing. It's kind of not clear in the

plan, the measures that were taken to stop the source are kind of never documented. But from what you're saying, it seems like it was one event, it's not something that's recurrent; rather, it was something that was one event of a leak or something, but I think we're clearer on this. It's good that you've shared the plan because I believe it's important that we read it to be able to submit any comments later on. Thank you.

Daniel Rodríguez: Any other comments?

José Luis Sierra Ruiz: Good evening, everyone. My name is José Luis Sierra. I'm a representative of Extasy Print, one of the places where one of the toxic faults was found. My question is, you've been conducting these studies for some time. You did soil tests. You did tests on all the chemicals we have. You did gas tests in which you spent several days with some pumps. What else did you do? You used, through the sewer system of the Aqueduct... Because our discharge... The discharge happens when we wash a frame; it doesn't go down to the soil, it goes down the sewer. PRASA came and certified that it went... because they opened the sewer drain on the street, and the product, since it has a dye, was going down through there. Simply, in all these years, the only recommendation given to us by one of the people who went there was to install another extractor. All of the products we use... There are sprays that could perhaps have the chemicals presented. But none of those chemicals go to the soil. Let me explain. This is a spray can; this is a frame, which is what we use. We spray it on the frame, we wipe it with a washcloth, and the washcloth goes in the trash. It's not that there's a hose turned on and the product is flowing on the ground. The gas... The liquid form, not propane gas—the gas form—the liquid form. We use it to clean the frames because it's paint, water-based paints. In the

same way, we remove the excess paint; it's stored in the can—it doesn't go bad; if it doesn't go over a certain temperature, it won't dry up. To clean it, we use a washcloth with gas; we clean it, the washcloth goes in the trash. In other words, there's never any discharge on the ground. What products or what was there in the building previously? Because here in Cabo Rojo, there are more than six companies that do the same work we do. We've been in this building for 26 years and the products have always been the same and the product never falls on the ground. Or the gas. Or the spray, and the spray may be the only one that has one of the components. According to what you investigated at that time, two years ago, we were told that you were looking for a product like the ones that mechanics used to use before to wash carburetors. The meta... meta... oh, I don't know, I don't remember. But we don't use that product. Cabo Rojo—I'm not justifying anything—but Cabo Rojo is full of good mechanics, the products they use to wash engines and their cars, no one knows where they dispose of that waste. As a representative of Extasy [Q] Print, I am requesting and asking you to come back again. I can give you the paint cans so that you can see the components, the sprays, and so that you can see again how they're used. Because I believe that, even though we're there, we're not the ones who are contaminating the soil. If that had been the case, perhaps some agency would have told us, "Look, you can't use this product because of this, this, and this." And we would look for alternatives to fix it with the companies. The only thing they said to me was "Install another extractor." About a week ago, a gentleman came, an environmental quality inspector, Mr. Javier Mercado. He visited us. He's not here? And he said, "Where's the chimney?" I went to show him the extractor. "But this doesn't emit smoke." We don't burn anything nor do we have any vapors to expel. We use the extractor

we have to remove the heat that becomes trapped in the structure and perhaps also when the shirt—when the paint fuses with the t-shirt fiber, it gives off a bit of a smell—to remove the smell, so that we're not absorbing it all the time. And he said to me, "But there's no smoke here." And I [said], "No, there's no smoke." "And where's the smoke chimney?" We would like you to come back and visit us at the premises somehow. Redo... In fact, there's an open well on the premises that you go and monitor frequently that has nothing to do with the workshop because it's far away. Inside the premises you conducted more than 16 tests, on the land, even where we clean, which is exactly around here. *(Stenographer's Note – He is referring to one of the maps displayed in front of the stage.)* It's in this little part here.

Daniel Rodríguez: Let me see if I can get the graphic for you so that you can see it on the screen and everyone else can see it. *(Stenographer's Note – Daniel finds slide number 15 of the presentation.)*

José Luis Sierra Ruiz: Exactly. In that area. But we would like to know what specific product is the one that creates that supposed contamination. Going back to what was explained to us about a year and a half ago, by one of the people who was doing the tests... Well, I'm just going to speak at random as if it were the map... He explained to us that the contamination is in several points in the area of Cabo Rojo. I don't understand how, if the underground flow of water runs all over the geography of Cabo Rojo, how it just so happens that two specific points contaminate, when the other one is here, the other one is over there. Albeit in small amounts. We don't know if it's because in the past, 20, 30, 40 years ago, [there was] a large discharge from steel drums or whatever at a

specific site and that was what contaminated the entire vein of water that is running. I, as representative of Extasy Q Print, would like you to visit us—our door is always open for any kind of study—and for you to tell us what specific product is similar to the product that's contaminating the vein of water in order to remedy or eliminate whatever it is.

Daniel Rodríguez: The comment has been noted. We'll answer the comment you've just made tonight. This will be part of the record.

José Luis Sierra Ruiz: Thank you.

Daniel Rodríguez: Are there any other comments?

Manuel Portela: My name is Manuel Portela. I'm a resident of Cabo Rojo, specifically the Buyé area. My question deviates a bit from what we're specifically addressing here and now regarding the town center of Cabo Rojo, but, for the record, I would like, number one, to let you know that we're very willing to help you in any way because we want to protect the environment and we're willing to help you in that way. My question is, is there some study in progress or some study planned to address the situation of the treatment plant in the Buyé area? It contaminates that whole area and that whole beach, specifically the two buildings that are there, which discharge into that treatment plant. Whenever it rains, it contaminates the whole area, even the beach. Is there a study planned to address the situation with the treatment plant in Villa Taína? Which also, whenever it overflows, whenever it rains, contaminates that whole area, because the pipe that drains the supposedly treated water from the treatment plant that usually, for many years, discharged it into the middle of the bay is broken right there where the Villa Taína ramp

is located and, whenever it rains, there's wastewater all over the place. Well, I wanted to bring this up for the record. My question is, will that be addressed as this is being addressed in the town center? Because the residents of the Buyé and Villa Taína areas are concerned about that. Those treatment plants definitely do not comply with treating the water correctly. That's why we have... there's always a red contamination flag at Buyé Beach. It looks so pretty, but we bathe there in water with feces from those treatment plants that are no good.

Daniel Rodríguez: We'll be forwarding these comments to people within the Agency who deal with those programs, who work with those programs, so that they can address the concern you're presenting tonight, because this is beyond the scope of the work I've been tasked with.

Manuel Portela: Thank you, and I'd like to take this opportunity because we're representatives of the community here and, since you're representatives of the EPA, well... But what you're doing is really good. I would like that to also happen in an area where there's such a big source of contamination like the one in Buyé and Villa Taína.

Daniel Rodríguez: Thank you for your comment.

Randy Toro: Good evening, everyone. My name is Randy Toro. I live in the area of Bajura, close to one of the wells that's identified there. My concern and my presence is due to the situation we're currently having with the contamination. I think there has to be more somewhere else. I don't think it's only one specific area, like the one shown here. But it's like the opinion of one of my fellow [residents] here, the first opinion. We don't

have the knowledge to say for sure, only by taking a water sample and taking it to a lab. But if we believe that, at this time, it's drinkable, that you can drink it, one can run into the normal and ordinary situation in those... it's not a situation that's adverse to that. The schools located behind there, a preschool that was there as well, didn't they run any risk from the contamination that's there, quote, unquote? Well, as it can be understood here. In my opinion, I don't think it's the only place that's contaminated, because, here, these veins run all over Cabo Rojo. So, there must be more places. The fact that it's present in this area is a different thing.

Daniel Rodríguez: I would like to emphasize again that the contaminant levels of chlorinated volatile organic compounds detected by PRASA were below the levels of the Puerto Rico government and the federal levels. At no time does the source of water pose a public health problem to the community that uses the system of urban wells in Cabo Rojo. We believe that one of the wells had the highest concentration, but, even so, it was below the levels and it was removed from the system because we believed it could be moving the plume of contamination in that direction, because of the aggressive extraction in that well. Therefore, the water in Cabo Rojo, I believe, is not being affected by this contamination problem. These are future actions. We can't leave the contamination at the site, because it poses a risk if we don't take action. That's what we're proposing, taking action against that source to reduce or eliminate that risk. In many of the structures surrounding the site where the contamination was found, we conducted vapor intrusion studies inside the structures, inside the homes. In 2011, we investigated 29 structures, 29 businesses, offices, homes, and we didn't find that there was an air quality problem

caused by the contamination in the groundwater that's running underneath the place where those people live and work. The only place where it was detected that it could be a problem was where we identified the two potential sources, which are Extasy Q Print and Cabo Rojo Professional Dry Cleaners. Cabo Rojo Professional Dry Cleaners is vacant. At Extasy Q Print, the risk that was shown to exceed [the levels] was for residents, not for business, and nobody lives there. It's a commercial activity. Therefore, we believe, based on the information that we have, that there's no risk at this time to public health from the contamination in the groundwater. But that's not going to stop us from doing something. We're going to take action. That's the action we're proposing tonight.

Daniel Rodríguez: Are there any other comments?

Cinthia Martínez: Good evening, my name is Cinthia Martínez. I represent the [Puerto Rico] Industrial Development [Company] and I wanted to know if those remedial alternatives you're presenting also include the plume near PRIDCO.

Daniel Rodríguez: The plume near PRIDCO, near the industrial development facilities is to the north. What we are proposing is monitoring that plume. It doesn't include the more aggressive remedy that we're proposing for the town center.

Cinthia Martínez: Ok, thank you.

Celys Irizarry: Hello, my name is Celys Irizarry, a former resident of Cabo Rojo and a student as well, for many years, master's degree in environmental engineering. My question is addressed at knowing if there is any kind of educational campaign for the people in those businesses who handle this kind of chemical, so that they can do those

management controls with the various kinds of chemicals they have in order to prevent these contamination problems from occurring from the outset. Perhaps there may be lack of knowledge among the general public, which doesn't exempt you from compliance, but which perhaps could prevent certain problems of this kind in the future.

Daniel Rodríguez: I don't know if there's a campaign to provide assistance in terms of knowledge, but I do believe the various industries have their organizations, which bring these issues to the people who belong to that kind of industry. I also believe that regulatory agencies also have assistance programs for the various kinds of industries regarding the waste they generate. We have information on the webpage of the agency I work for, the United States Environmental Protection Agency, where, depending on the sector you work in, you can find information about the typical waste that kind of industry would generate. So, there's information out there that they can use to increase their knowledge about how to handle their materials, their products, and their waste.

Celys Irizarry: Thank you.

Daniel Rodríguez: Are there any other comments?

Roberto Ramirez: Good evening. My name is Roberto Ramírez. I'm the mayor of Cabo Rojo. I would like to thank the EPA for coming to this talk. The municipality has been working since before 2011 or 2012, when this situation began. When I became mayor in 2013, the EPA ordered us to move the adjacent childcare or Head Start [center] that we had right near here. We moved it to what had been built for the Central American Games on the Relin Sosa Track. The kids are in a separate area there in a structure. It was a

recommendation made by the New York EPA itself, which contacted us. After that, a company came in to do the sampling and build the wells. The trailer was in the industrial zone for a long time working on all the data. The municipality upheld, along with PRASA—that the well that's near here was also, as you said, the one that had the highest volumes of the chlorinated solvents—and we've been watching over the citizens. I believe that... I know PRASA has done it, but people give a lot of credibility to the EPA. You should publish frequent bulletins about what the sampling is showing so that the community, as the citizen very well said—it was you *(Stenographer's note: Points at a woman in the public)* or someone who spoke—about how the citizens could be kept informed about what's happening with that monitoring. I think it would be appropriate... a recommendation... that it be sent. If you send it to us at city hall, we'd be glad do it through the media that we have available, both radio, radio shows, the Facebook network, and our municipality webpage, for people to be kept informed. She was the one who was here *(Stenographer's note: Points at Frances Delano in the public)* since 2013 more or less working with the Superfund. So, we've always collaborated with what the investigation is looking for, which is finding out who caused this situation for the citizens of Cabo Rojo. The water, as you very well said... and PRASA, even during the emergency we were facing distributing water using the tanks that are certified by the Department of Health. But before a single drop of water is poured, the Department of Health or PRASA has to do a water analysis on it before it's distributed to the people, so that it's drinkable, [so] that it's water that's safe, so that people can drink it. So, we would like to thank you for being here tonight. The municipality is completely willing to continue collaborating so that we can solve [this] once and for all, given the situation that this area of our town depends

on those deep wells. I don't know if he said it, but there are 16,000 homes that receive this service. Cabo Rojo has three sources where water comes from. It comes from Mayagüez, which is the part of Guanajibo, 1,700 residents who get water from that area. And for 7,000, it comes from the Lucchetti Lake, through the irrigation channels, and it's treated there in the Betances area. So, it's here in the middle of the city that receives water from the deep water wells. Thank you, thank you for being here.

Daniel Rodríguez: Thank you, Mr. Mayor. I would like to thank the Municipality of Cabo Rojo because they have been a great help during the investigation phase, providing us with places for meetings, helping us with traffic control when we were installing the wells and taking the samples. So, we'd like to thank you for all the help you gave us during that time and for allowing us to use this library to keep one of the repositories and hold tonight's meeting. Thank you very much.

Elaine Rivera: I'm Elaine Rivera, a resident here in Joyuda. I have a comment. It's to thank you, because maybe you didn't mention it at the beginning, but the Superfund are federal funds that everyone fights for. Everyone wants their contaminated sites to meet these criteria; let me explain, to meet the criteria to receive funds for this. I know it's a struggle you go through, because everyone wants their sites to be [in the] Superfund and have this. So, thank you for sharing all this information with us and for listing this as a Superfund site so that all that money will come in to help with the cleanup.

Daniel Rodríguez: Thank you for your comment. Are there any other comments? Thank you very much for participating in this meeting tonight. I'm bringing the meeting to a close. Thank you.

The meeting is brought to a close and the record is closed at 7:29 pm.

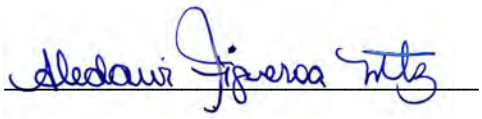
STENOGRAPHER'S CERTIFICATION

I, Aledawi Figueroa Martínez, stenographer for Smile Again Learning Center, Corp., hereby CERTIFY that:

The foregoing is the true and accurate transcript of the recording taken during the meeting held at the place and on the date indicated on the first page of this transcript.

I furthermore certify that I have no interest in the outcome of this matter and that I am not related to the parties involved in the same within any degree of consanguinity.

In Isabela, Puerto Rico, on August 15, 2018.



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CERTIFICATE OF TRANSLATION INTO ENGLISH

I, Miriam R. Garcia, of legal age, married, a resident of Valladolid, Spain, and a federally-certified court interpreter and professional translator, do HEREBY CERTIFY that I have personally translated the foregoing document and that it is a true and accurate translation to the best of my knowledge and abilities.

In Valladolid, Spain, today, August 29, 2018.

Miriam R. Garcia
ATABEX TRANSLATION SPECIALISTS, Inc.
P.O. Box 195044, San Juan, PR 00919-5044

APPENDIX VI

Puerto Rico Environmental Quality Board's Concurrence Letter

APPENDIX VII

Public Meeting Attendance Sheet

Cabo Rojo Groundwater Contamination Superfund Site
Cabo Rojo, Puerto Rico

Attendance Sheet

Name	Address	Phone	Email
Ebdiel Escalera	San Sebastián	U.S. Privacy Act (b)(6)	
Ing. Augusto H. Ortiz	Mayaguez		
Cynthia M. Martinez	San Juan		
BRENDAN MacDONALD	U.S. Privacy Act (b)(6)		
Elaine Rivera			
Ana M Román			
Aubrey Rodriguez Ortiz	Cabo Rojo		
Frances Deliz	San Juan		
Mirza Acosta Wiscovitch	Cabo Rojo PR		
Milton R Toro Nazario	Cabo Rojo		
Martin G. Toro Toro	Cabo Rojo		
Fernando L. Seguinot	Cabo Rojo		
Fernando C. Seguinot	Cabo Rojo		
Gloria M. Toro	Cabo Rojo		
Nilsa O. Lara	Mayaguez		
Glorymar Cortés	Moca		
Juan Cruz	ST		
Jose A Vega	San Juan		
Pascual E. Velazquez	San Juan		
Melvin Menendez Figueroa	San Juan		

Cabo Rojo Groundwater Contamination Superfund Site
Cabo Rojo, Puerto Rico

Attendance Sheet

Name	Address	Phone	Email
Omar Santiago Santiago	JCA Cabo Rojo Area	U.S. Privacy Act (b)(6)	
José L. Sierra			
MANUEL PONTE JR			
FATIMA CAMACHO			
Celys Irizarry			
Gerardo Ortiz Colón	MARS		
Rolando Collazo Rodriguez			
José Reyes	C		
Gabriel Lopez	MACA		
Aledawi Figueroa			

APPENDIX VIII

Transcript of the Public Meeting and Written Comments

REUNIÓN PÚBLICA
CABO ROJO GROUNDWATER CONTAMINATION SITE
CABO ROJO, PUERTO RICO
9 DE AGOSTO DE 2018
CABO ROJO, PUERTO RICO

Notas de transcripción:
Hora pautada de reunión: 6:00pm
Lugar: Biblioteca Rebeca E. Colberg

Se abre record a las 6:00pm

Brenda Reyes: Buenas noches, para propósitos de esta reunión se hace una transcripción así que vamos a dar por abierta la reunión. Mi nombre es Brenda Reyes Tomassini, oficial de asuntos públicos de la Agencia Federal de Protección Ambiental. En la noche de hoy se encuentra conmigo Daniel Rodríguez, ingeniero, que es el gerente de proyecto, y se encuentra Frances Delano de CDM y Brendan MacDonald que está presto a entrar de CDM también. En la noche de hoy estamos aquí en la biblioteca Blanca Colberg del pueblo de Cabo Rojo, para presentar el Plan Propuesto, para remediar la contaminación del agua subterránea, en el lugar de Superfondo conocido como Pozos de Cabo Rojo. Este Plan Propuesto describe las alternativas de remediación para el lugar de Superfondo e identifica cuál es la alternativa preferida y el racional o el racionamiento tras esta alternativa seleccionada. La Agencia de Protección Ambiental Federal tiene un repositorio de información, con los documentos del lugar aquí en la biblioteca Blanca Colberg. Tiene en la oficina de la EPA región 2 en Nueva York. Tiene en nuestra oficina del Caribe en Guaynabo, la Agencia de Protección Ambiental Federal, División del Caribe, ahí tiene un repositorio de información. Estamos en periodo de comentario público. El anuncio salió en el periódico primera hora, entiendo que la semana pasada, salió el anuncio, el 2 de agosto. Salió publicado en el periódico Primera Hora. Así que

en la noche de hoy, mi compañero Daniel Rodríguez va a estar haciendo una presentación. Vamos a darle 15 minutos por si llega alguien más. En la noche de hoy ustedes pueden someter sus comentarios por escrito. Tenemos mapas para que ustedes puedan ver. Las reuniones son sumamente interactivas, así que le damos la más cordial bienvenida.

Se hace un receso de 15 minutos a las 6:03pm

Se reabre record a las 6:15pm para comenzar oficialmente la reunión.

Brenda Reyes: Ok, ahora sí arrancamos. Buenas noches para los que acaban de llegar. Mi nombre es Brenda Reyes, oficial de asuntos públicos de la Agencia de Protección Ambiental Federal, la EPA por sus siglas en inglés. En la noche de hoy me acompaña mi compañero, el ingeniero Daniel Rodríguez, quien es el gerente de proyecto, para el lugar de Superfondo Pozos de Cabo Rojo. En la noche de hoy vamos a estar presentando el Plan Propuesto y las alternativas que fueron desarrolladas para este lugar de Superfondo y la alternativa que ha sido preferida para la remediación de contaminación en el lugar. Me acompañan esta noche Brendan MacDonald de CDM, Frances Delano de CDM - quienes son los contratistas - la Sra. Gloria Toro de la Junta de Calidad Ambiental/Departamento de Recursos Naturales. Con eso damos por iniciada la reunión. Les recuerdo que estamos en periodo de comentario público. Los documentos están aquí en la Biblioteca Blanca Colberg. Están en la Agencia Federal de Protección Ambiental, nuestra oficina, la EPA, en Guaynabo. En el centro de expedientes del programa de Superfondo en Nueva York, en la región 2 de Nueva York, para las personas que viven fuera. Es bien importante la participación del público. El programa

de Superfondo de la EPA depende mucho de la participación de ustedes, el público. Se ofrecen estos espacios de participación. Ustedes vienen, revisan los documentos, pueden someter comentarios. Estas reuniones tienden a hacer bastante interactivas luego de la presentación. Tenemos mapas. Si ustedes quieren hacer su comentario aquí por la vía oral, también le damos el micrófono, tenemos transcripción. Así que pues ustedes pueden someter sus comentarios, y cualquier otra preocupación, a través del micrófono, sino por escrito. Estamos en periodo de comentarios públicos. Así que sin más preámbulos, Danny, todo tuyo.

Daniel Rodríguez: Muy buenas noches a todos. En esta noche le vamos a estar hablando sobre el plan que desarrollamos para la remediación de la contaminación del agua subterránea en Cabo Rojo.

(Nota de la transcriptora - Se pasa a la laminilla 2: Agenda)

Como ya les dijo la compañera, mi nombre es Daniel Rodríguez, soy el gerente del proyecto. La señora Brenda Reyes es la coordinadora de asuntos comunitarios - de participación comunitaria - y tenemos también - aunque no sé si llegó en esta noche - es el gerente de proyecto Pascual Velázquez García, que trabaja para lo que en un momento fue la Junta de Calidad Ambiental, ahora entiendo que es el Departamento de Recursos Naturales y Ambientales.

(Nota de la transcriptora - Se pasa a la laminilla 3: Agenda)

En esta noche le vamos a estar presentando el proceso del programa de Superfondo, que es el que está rigiendo, o está llevando a cabo, la limpieza, la investigación y remediación de la contaminación que se encontró en el agua subterránea. Le vamos a

estar hablando sobre los resultados de la investigación remediativa y le vamos a estar presentando las alternativas de remediación y cuál fue el remedio preferido para atender la contaminación en Cabo Rojo.

(Nota de la transcriptora - Se pasa a la laminilla 4: Proceso Súper Fondo)

El programa de Superfondo lo que hace es que atiende la contaminación, escapes de contaminantes que llegan al agua subterránea, para atender la amenaza que esa contaminación presenta a la salud humana y al medio ambiente. Tiene dos vertientes, dos tractos, una es acciones de remoción que son a corto plazo, atiende el problema que presenta esa contaminación, de una forma inmediata. La intención es reducir o eliminar la contaminación. El otro tracto, que es el tracto que yo trabajo, es el de la acción de remediación. Esa es más a largo plazo. Ahí se hacen las investigaciones, se toma una idea de cuál es el problema, cuál es la naturaleza de la contaminación, y se le busca una solución a esa contaminación que está presente.

(Nota de la transcriptora - Se pasa a la laminilla 5: Fase de Evaluación de Lugares)

Aquí se le enseña en las diferentes etapas. Se descubre el lugar. En Cabo Rojo la Autoridad de Acueductos y Alcantarillados encontró, durante el muestreo que ellos realizan a las fuentes de agua que ellos tienen, que había contaminación con orgánicos volátiles clorinados en el agua, en los pozos que ellos estaban usando. Nos presentó ese problema. EPA y la Junta de Calidad Ambiental empieza el proceso de estudios preliminar del lugar. Se va y se recoge toda la información que está disponible para identificar cuáles pueden ser las posibles y potenciales fuentes de contaminación. Después de esto se hace la investigación del sitio. Esta investigación se hace con la

información que ya recogimos, un vamos investigamos esas fuentes y vamos reduciendo el área, tratando de definir cuál es la extensión de la contaminación. Después de ese paso se hace un cálculo matemático, que es el Hazard Ranking System, que es el instrumento que nosotros utilizamos para proponerlo, para inclusión en la lista de Superfondo. Si el sitio tiene una clasificación, o un puntaje, mayor de 26 o 28, entonces es elegible a la lista de Superfondo. En el caso de Cabo Rojo se incluyó el 10 de marzo de 2011. Una vez incluido en el programa de Superfondo, mi programa entra, y comenzamos la investigación de remediación y los estudios para determinar la extensión - la naturaleza de la contaminación - y cuál es la extensión de esa naturaleza para poder desarrollar un plan o un remedio que va a atender esa contaminación. El objetivo siempre es el mismo, reducir o eliminar el riesgo a la salud humana y al medio ambiente.

(Nota de la transcriptora - Se pasa a la laminilla 6: Investigación de Remediación/Estudio de Viabilidad)

Esto es más de lo que ya le expliqué.

(Nota de la transcriptora - Se pasa a la laminilla 7: Descripción del Lugar)

el lugar está ubicado aquí en el Barrio Bajura, pero más bien cerca del área urbana del municipio de Cabo Rojo. Consiste del sistema de acueductos, que son seis pozos, que ellos tenían, que están operando, que estaban activos en aquel tiempo, del 2002 hasta el 2006 — que entiendo que fue que sacaron el pozo, uno de los pozos que estaba en uso — y encontraron contaminación en tres de ellos. Uno es Hacienda Margarita el otro es Club de Leones y el pozo de Ana María que está cerca de la escuela. Los otros cuatro pozos Cabo Rojo 1, 2 y 3 no detectaron contaminación. Aquí yo quiero hacer la salvedad

quiero aclarar que, aunque acueductos encontró contaminación en esos pozos, ninguno de los pozos exhibió contaminación por encima de los estándares del gobierno de Puerto Rico y los federales, lo que le llamamos nosotros el MCL “Maximum Contaminant Level”.

(Nota de la transcriptora - Se pasa a la laminilla 8: Mapa de Localización)

Ésa es el área, los pozos que aparecen como en anaranjados, esos son los pozos que se detectó que tenían volátiles orgánicos clorinados. Los otros no tuvieron detección.

(Nota de la transcriptora - Se pasa a la laminilla 9: Mapa de Localización)

El sitio lo define las posibles fuentes que contribuyeron a la contaminación que se encuentra en el agua subterránea. De 68 fuentes que comenzamos investigando se redujo a 5 antes de empezar la investigación remediativa y después de hacer la investigación remediativa se redujo a tres. Estos son Cabo Rojo Professional Dry Cleaners, que está aquí cerca en el pueblo, Extasy Q Print, que está allá en la parte de atrás de la biblioteca, aquí al ladito, y Fomento Industrial, el complejo industrial que ellos tienen, el parque industrial que ellos tienen, al este de la 100.

(Nota de la transcriptora - Se pasa a la laminilla 10: Trasfondo Histórico)

Para dar un poquito más de información del trasfondo histórico. Aunque he ido tocándolo mientras voy discutiendo los otros sitios. Como ya les dije, la Autoridad de Acueductos, durante su monitoreo regular, detectaron esos volátiles orgánicos en el agua. En el 2006 la EPA comienza a hacer la investigación preliminar del lugar y empezamos a buscar estas fuentes potenciales que pudieron haber contribuido a la contaminación. Como ya les dije, empezamos con 68 lugares. En todas se recogieron muestras, se hicieron los

trabajos de investigación. Las muestras de gases de suelo, muestras de suelo, muestras de agua subterránea, de lo que ya existía en el sitio. En el 2011 se incluyó en la lista de prioridades nacionales. Del 2013 al 2017 comenzamos a hacer los trabajos de investigación para la remediación, que esa es la parte en la que yo participé más activamente, y en el 2018 completamos la investigación de remediación y el estudio de viabilidad. El estudio de viabilidad nos presenta cuáles son las alternativas para remediar la contaminación que está en el cuerpo de agua.

(Nota de la transcriptora - Se pasa a la laminilla 11: Trabajos de Campo durante la RI)

El grosor del trabajo de investigación, del trabajo de campo, se hizo del 2013 al 2014. Cogimos muestras de gases de suelo, cogimos muestras de suelo, alrededor de estas industrias que nosotros habíamos identificado como posibles fuentes, que eran cinco. A esas tres que ya les dije Cabo Rojo Professional Dry Cleaners, Extasy Q Print, y Fomento Industrial Este, también estaba D'Elegant Dry Cleaner que era un complejo comercial. Estaba donde ahora está Walgreens, que ahí había un restaurante chino, una panadería, un club de vídeo, un sitio de recorte y hacer uñas, etc, etc. Pero ese edificio se eliminó, se destruyó y construyeron lo que tenemos ahora, que es el Walgreens y 2 unidades comerciales en la parte de atrás, uno está vacante y el otro que es el restaurante chino. Se recogieron muestras en esos sitios, para estos parámetros. Se investigó el agua subterránea. Se instalaron pozos, se cogieron muestras, se midieron los niveles de agua para ver el flujo del agua subterránea, en el área que estamos investigando. En adición a eso, se tomaron muestras de aguas superficiales y sedimento en las quebradas aledañas a donde se encontraba la contaminación. En el 2017 volvimos al campo porque detectamos que había data que no teníamos, y teníamos que completarlo para poder

definir y afinar más la extensión de la contaminación. Se repitió un estudio de intrusión de vapor que se había conducido, se había llevado a cabo en el 2011, en 29 estructuras, que eran residenciales y comerciales en el área aledaña a donde estamos ahora mismo. En el casco urbano. Se repitió para ver si hubo un cambio desde el 2011 a ahora. Se cogieron muestras de suelo. Se instalaron otros pozos cerca de donde determinamos que no teníamos data para definir los plumachos de contaminación que pudieran haber en el área.

(Nota de la transcriptora - Se pasa a la laminilla 12: Fotos)

Estos son parte de los trabajos que se llevaron a cabo. Uno de los pozos que se instaló cerca de Cabo Rojo Professional Dry Cleaners, en un lote como de estacionamientos de carros. La foto que está a la derecha es uno de los “canisters” que se colocó cerca de Extasy Q Print para recoger la concentración de cualquier volátil orgánico en el aire, ambiental. El otro es el pozo que se instaló en el parquecito que está cerca de la escuela y de la quebrada. La que está a la derecha es una de las casas donde colocamos el contenedor para muestrear los gases que están debajo del piso. Se perforó el piso, se le puso un tubo y se recogió la muestra. Y ambiental dentro de la casa. esto es parte de los trabajos que se hacen.

(Nota de la transcriptora - Se pasa a la laminilla 13: Investigación Remediativa(RI))

De la investigación remediativa para el suelo se detectó en Extasy Q Print y en Cabo Rojo Professional Dry Cleaners PCE, que es tetracloroeteno, tricloroeteno (TCE) y cis-1, 2 dicloroeteno (DCE). Se detectó en los suelos, en la muestras de suelos que se tomó alrededor del edificio. En Cabo Rojo Professional Dry Cleaners el PCE que es el

tetracloroeteno fue el que estaba por encima de los niveles de cernimiento de las agencias. Se encontraron concentraciones desde 22 — que eso está por debajo del número — hasta 3700 microgramos por kilogramo. En Extasy Q Print el PCE estaba en el rango 73, por encima de los niveles de escrutinio, y el DCE en 480. En fomento industrial no se encontró, no se detectó contaminantes por encima de los niveles de cernimiento, en el suelo cuando investigamos.

(Nota de la transcriptora - Se pasa a la laminilla 14: Mapa)

Esta es el área aledaña a Cabo Rojo Professional Dry Cleaners. Los cuadritos — que sé que no pueden leer los números, aunque le dimos copia, o pueden obtener copia del Plan Propuesto — son los números que excedieron los niveles de criterio que tenemos, que habíamos establecido, para el lugar. El área magenta es lo que nosotros entendemos pudiera ser el área de preocupación debajo del edificio, por escapes que ocurrieron. Eso no se ha definido aún. Eso se va a hacer en el futuro.

(Nota de la transcriptora - Se pasa a la laminilla 15: Mapa)

En Extasy Q Print hubo 2 áreas donde los empleados cuando hicimos la investigación preliminar del sitio nos indicaron que ellos lavaban los “screens” que ellos usan para imprimir las camisetas y las toallas, y las cosas que a ellos se le contrata hacer, y excedieron los números de criterio que habíamos establecido para ese sitio.

(Nota de la transcriptora - Se pasa a la laminilla 16: Investigación Remediativa)

De vapores de suelo se detectó TCE por encima, desde .27 microgramos por metro cúbico, hasta 240,000 microgramos por metro cúbico, en esa área entre Cabo Rojo

Professional Dry Cleaners y Extasy Q Print. La detección mayor fue en Cabo Rojo Professional Dry Cleaners. La detección mayor de tetracloroeteno fue en Extasy Q Print, con una concentración de 110 microgramos por metro cúbico.

(Nota de la transcriptora - Se pasa a la laminilla 17: Investigación Remediativa)

Los resultados del agua subterránea, básicamente. La data demostró que hay 2 plumachos. En vez de una sola área, hay 2 áreas donde se encontró contaminación en el agua subterránea. El plumacho 1 consiste en su mayoría de PCE, TCE y DCE y cloruro de vinilo. Es la que está cerca de esta área que estamos nosotros ahora mismito, entre Extasy Q Print, Cabo Rojo Professional Dry Cleaners y el pozo de Ana María. El plumacho 2 consista de 1,1 DCE y 1,4 dioxano. Y esta al norte de la instalación de Fomento en el este.

(Nota de la transcriptora - Se pasa a la laminilla 18: Mapa)

Básicamente, aquí están las dos áreas delineadas. Lo que nosotros entendemos pueden ser los dos plumachos. La data ustedes la tienen en el reporte. Esta información la pueden conseguir en el reporte de la investigación de remediación, y en el reporte del estudio de viabilidad. Todo esto está contenido con lujo de detalle en esos documentos.

(Nota de la transcriptora - Se pasa a la laminilla 19: Investigación Remediativa)

No se detectó contaminación en los cuerpos de agua superficial ni en los sedimentos, relacionado con el sitio. Nosotros investigamos para darle seguimiento a esos químicos que son los que están relacionados con la contaminación de agua subterránea por el escape que ocurrió en esas potenciales fuentes de contaminación.

(Nota de la transcriptora - Se pasa a la laminilla 20: Evaluación de riesgo ecológico)

Se hizo una evaluación de riesgo preliminar, y no se encontró que hubiese un riesgo al regreso por la contaminación que se escapó al agua subterránea. Así que no encontramos un riesgo ecológico.

(Nota de la transcriptora - Se pasa a la laminilla 21: Evaluación de riesgo a la salud humana)

En la evaluación de riesgo a la salud humana, evaluamos el riesgo de los dos plumachos. Para el plumacho número 1, que es el que está en esta área, se determinó que excede todos los rangos aceptables de la EPA, para exposición a personas que trabajan en estos edificios, en estos sitios donde está la concentración alta de los contaminantes, y las residencias aledañas al sitio, donde está el plumacho, eso es para el riesgo de cáncer. Para el riesgo de no cáncer nosotros tenemos un valor de 1 unidad y se determinó que el valor era mucho más alto, el calculado. En la tabla están los números. También están incluidos en los documentos que son parte del repositorio y del récord administrativo del sitio. Para el plumacho 2 no se encontraron riesgos que estuviesen por encima del rango que la EPA establece, ni para el carcinógeno, ni para el no carcinógeno. Pero la detección de 1,1-DCE estaba por encima de los valores de los estándares de calidad de agua del gobierno de Puerto Rico y del gobierno federal. Por lo tanto se decidió que se tiene que tomar una acción también con ese plumacho, con el plumacho número 2.

(Nota de la transcriptora - Se pasa a la laminilla 22: Plan Propuesto)

¿Cuál es el Plan Propuesto? En el Plan Propuesto nosotros identificamos las acciones para atender esa contaminación. Proveemos este foro para que las personas puedan proveer comentarios, puedan enterarse de las labores que asistieron y hacia dónde es que vamos con los trabajos que se hicieron. Se abrió un periodo de comentarios públicos que comenzó el día 2 de agosto, y va a estar vigente hasta el 3 de septiembre de 2018. Se les presenta la alternativa que las agencias ambientales, en este caso la EPA y la Junta de Calidad Ambiental, presenta para atender el problema de la contaminación.

(Nota de la transcriptora - Se pasa a la laminilla 23: Objetivos de la Acción Remedial)

De la investigación remediativa se determinó que tenemos que tomar acción en los suelos y en el agua subterránea. Esto se hace para atender el riesgo a la salud humana y al medio ambiente. Se establece unos objetivos de acciones de remediación, que son los que guían estos trabajos que se van a llevar a cabo. En suelo se estableció un objetivo de acción de remediación para evitar que el suelo contaminado sirva como una fuente de contaminación al agua subterránea. O sea, que siga contribuyendo contaminantes al agua subterránea. Para prevenir y/o minimizar que el suelo contaminado sirva como una fuente de la intrusión de vapores en el momento actual o en el futuro. La primera, agua subterránea, es más bien hacia el futuro. En agua subterránea el objetivo es prevenir la exposición humana al agua subterránea contaminada en concentraciones superiores a los objetivos preliminares de la remediación. A los estándares que se establecieron para discernir si hay o no hay contaminación, y si presenta un riesgo a la salud humana. Restaurar el agua subterránea a la calidad de agua potable. O sea, por encima de los niveles máximos de contaminación que las regulaciones de las agencias del gobierno de Puerto Rico y las federales establecen. Prevenir y minimizar que el agua subterránea

contaminada sirva como fuente de intrusión de vapor actual y futura. O sea, que el agua subterránea se use como un medio para transportar la contaminación y que a su vez, a través de intrusión de vapor, nos llegue y nos afecte la salud de nosotros, en nuestras residencias y en nuestro sitio de trabajo.

(Nota de la transcriptora - Se pasa a la laminilla 24: Resumen de las Alternativas de Remediación)

Como en todos los programas de remediación hay elementos comunes, que nosotros los identificamos porque van a ser lo mismo para todas las acciones remediativas que vamos a hacer, excepto por uno, la de no acción. La de no acción es que no hacemos absolutamente nada.

- En todas tenemos un componente de investigación, pre-diseño y estudio piloto. Donde cogemos más data para afinar el remedio propuesto para implementarlo.
- Los controles institucionales que son los mecanismos que utilizamos, no de ingeniería sino más bien regulatorios, para evitar que donde se encuentra la contaminación, las personas puedan extraer esa agua y utilizarla.
- Monitoreo a largo plazo. Durante el tiempo de remediación que se establece vamos a estar monitoreando para asegurarnos que la contaminación que está en el agua subterránea está siendo atendida, ya sea mediante una reducción en las concentraciones o en la eliminación de la contaminación, para que llegue a niveles que no presente riesgo a la salud.
- Restauración del lugar.

Estos son algunos de los componentes más significativos. También hay otros componentes como utilizar remedios verdes, más amigables al medio ambiente, hacer la investigación de cada 5 años, para ver si en el remedio está cumpliendo con sus objetivos.

(Nota de la transcriptora - Se pasa a la laminilla 25: Alternativa de Remediación Número Uno)

En la alternativa de remediación 1 — esto lo tenemos en todos los sitios — es algo que el plan de contingencia nacional, del programa de Superfondo, nos requiere, que es no acción. No acción – para ver si eso es una opción viable. No se hace absolutamente nada. En este caso no lo es, porque ya los estudios de evaluación de riesgo nos determinó que hay un riesgo, y tenemos que atenderlo. Pero siempre se considera.

(Nota de la transcriptora - Se pasa a la laminilla 26: Alternativa de Remediación Número Dos)

La Alternativa número 2, es la extracción de vapor de suelo y la extracción de doble fase, monitoreo de la atenuación natural, y una contingencia para el tratamiento in-situ, de ser necesarios, y controles institucionales. Esa es la alternativa número dos. Ahí el Plan Propuesto es extraer de una forma bien agresiva e impactar las dos fases, la fase de suelo y la fase de agua subterránea contigua a donde se encontró la contaminación. ¿Se acuerdan de aquella figura donde están las dos estructuras que tienen contaminación identificadas con magenta? En esas áreas se va a implementar este tipo de remedio para atender la contaminación ahí y evitar que siga propagándose en el agua subterránea. También provee un monitoreo a largo plazo para ver si eso que estamos

implementando está siendo efectivo, no nos está cambiando que están bajando los niveles de contaminantes en el agua subterránea, como se proyectó. No incluye activamente el plan de contingencia, el "in-situ treatment". Cuando se lleva a cabo la fase de prediseño, de investigación, y la parte del proyecto piloto, del estudio piloto, ahí vamos a tener una idea más completa si este remedio por sí solo va a poder atender el problema de la contaminación. De no atenderlo pues entonces tenemos que ir a activar el plan de contingencia para "in-situ treatment". Otra posibilidad es que implementamos esto y no veamos una reducción significativa en los niveles de contaminantes. Pues tenemos que entonces modificarlo y activar el plan de contingencia. Y los controles institucionales, que eso se ponen en el sitio y eso no se quita hasta tanto los niveles de contaminantes bajen por debajo de los estándares de Puerto Rico y del gobierno federal, para el agua potable.

(Nota de la transcriptora - Se pasa a la laminilla 27: Alternativa de Remediación Número 2)

De la alternativa número uno, no le dije el costo. El costo es cero porque no se hace nada. En la alternativa #2 se estima que el costo va a estar en 5.3 millones, va a tomar como dos años y medio en ser implementado y esperamos cumplir con los objetivos de la remediación en 30 años o menos.

(Nota de la transcriptora - Se pasa a la laminilla 28: Alternativa de Remediación Número tres)

La alternativa número tres es básicamente lo mismo que estábamos hablando con relación a la extracción de vapor de suelo y la de doble fase. Pero esta alternativa sí

contempla el tratamiento activo, in-situ, de no solamente de las zonas cercanas a donde están las fuentes, sino de todo el plumacho que está contaminado. Se asume que la tecnología que se va a utilizar es la de biodegradación anaeróbica aumentada. Esto es lo que nosotros asumimos en este momento. Puede que cuando hagamos el estudio de prediseño investigativo y corramos el estudio piloto tengamos que utilizar otra tecnología. Para propósito de esto, de la evaluación de esta alternativa, se asumió esa.

(Nota de la transcriptora - Se pasa a la laminilla 29: Alternativa de Remediación Número tres)

Lo mismo. Es un programa de monitoreo a largo plazo, para asegurarse que es una tendencia de reducción y controles institucionales. El costo estimado de esta alternativa 3 es de 7.6 millones aproximadamente. Va a tomar de 4-5 años implementarla. Y el mismo objetivo, se espera en 30 años o menos alcanzar el objetivo de la remediación del sitio.

(Nota de la transcriptora - Se pasa a la laminilla 30: Evaluación de las Alternativas de Remediación)

Todas estas alternativas, cuando nosotros las estamos evaluando, tienen que cumplir con estos criterios. Son estos nueve criterios:

- Protección General de la Salud Humana y el Medio Ambiente. Que es la base del programa.
- Cumplimiento de las regulaciones estatales, federales, y locales, de haberlas.

- Permanencia y efectividad a largo plazo. O sea, que se reduce, se eliminó riesgo o se redujo el riesgo a niveles aceptables.
- Reducción de toxicidad, movilidad o volumen a través del tratamiento
- Efectividad a corto plazo
- Implementabilidad
- Costo
- Aceptación del Estado. En este caso del Estado Libre Asociado
- Aceptación de la comunidad. Para eso se le da la oportunidad para evaluar el Plan Propuesto de remediación para el sitio, a la comunidad.

(Nota de la transcriptora - Se pasa a la laminilla 31: EPA Remedio Preferido)

El remedio que es el preferido por ambas agencias reguladoras — en este caso por la EPA y la agencia recién creada, Departamento de Recursos Naturales y Ambientales/ Junta de Calidad Ambiental — están de acuerdo de que la alternativa 2 va a cumplir con el objetivo. Esta es la que le estamos presentando en esta noche a este grupo y es la que estamos identificando el Plan Propuesto que se publicó en los diferentes repositorios que tenemos para que el público lo pueda revisar.

(Nota de la transcriptora - Se pasa a la laminilla 32: EPA Remedio Preferido)

Entendemos que:

- Protege la salud humana y el medio ambiente

- Cumple con todos los requisitos relevantes y aplicables (ARARs)
- Es Costo Efectivo

(Nota de la transcriptora - Se pasa a la laminilla 33: Próximos Pasos)

Los próximos pasos:

- Estamos Solicitando Comentarios del Publico
- Nosotros vamos a preparar un Record de Decisión (ROD). Pero no hasta que podamos revisar todos los comentarios que recibamos y atenderlos. Los vamos a contestar. Van a ser parte del récord administrativo.
- El público tiene hasta el 3 de septiembre para hacernos llegar esos comentarios

Toda esta información está en la página que la EPA posteó para el sitio de Cabo Rojo. Estoy viendo si podemos…*(Nota de transcriptora – Daniel Rodríguez trata de acceder a la página web de la EPA)* Déjame parar la presentación aquí un minuto para brincar a la otra. Para que puedan ver.

Persona del público: ¿Los comentarios se envían a ese email?

Daniel Rodríguez: No, yo te voy a enseñar horita donde vas a enviar los comentarios. Déjame ver si puedo brincar a la otra. Esta es la página del sitio donde ustedes pueden conseguir toda la información relacionada a la contaminación de aquí de Cabo Rojo. El plan propuesto lo pueden conseguir aquí. Solamente presionen ahí y lo van a conseguir. Aquí están todos los documentos. Está en el Récord Administrativo, todos los estudios que se han hecho hasta el momento, reportes, documentos, están todos aquí. Si quieren

más información los pueden obtener directamente aquí. Van a ver toda la data que se ha recogido, y todos los estudios que existieron, todos los estudios que nosotros utilizamos para llegar a la conclusión del diseño de ese remedio o proponer el remedio. Voy a volver a donde estaba. *(Nota de la transcriptora: se refiere a la laminilla de la presentación, ya que salió de ella para enseñar la página de internet)*

(Nota de la transcriptora - Se pasa a la laminilla 34: Enviar comentarios)

Aquí es donde pueden enviar los comentarios. Me los pueden enviar a mi correo electrónico. Los pueden enviar también por correo regular a la dirección que aparece en pantalla. Cualquier pregunta que tengan me pueden llamar a mi teléfono también. Toda esta información está incluida en el Plan Propuesto, que entiendo hay copias afuera, que pueden llevarse.

Eso es todo lo que le tengo para esta noche. Pueden pasar si quieren hacer algún comentario. Tenemos aquí a las personas que van a estar llevando el récord de la reunión, y van a ser parte del récord administrativo.

Sí. Tenemos un micrófono acá al frente.

Manuel Sepúlveda: Buenas tardes, ya buenas noches a todos. Mi nombre es Manuel Sepúlveda, yo soy residente y trabajo en el centro urbano, allí bien cerca de uno de los sitios que han identificado que está impactado con la contaminación. Más allá yo soy un lego en el punto de vista científico. Yo entiendo que hay que descansar en la información que ustedes llevan por años acumulando y llegando a las conclusiones. Yo no estoy aquí para cuestionar eso, y como ciudadano no voy a hacer ningún comentario, porque no

tengo la capacidad ni el “standing” para cuestionar lo que ustedes han acumulado como evidencia científica. Pero como ciudadano, ¿qué yo tendría que tomar en consideración para hacer un comentario específico a este plan? De la lectura somera que le he dado ustedes indican que hay que impactar las estructuras, para poder construir las facilidades para hacer la extracción de los gases, el subsuelo, etc. etc. ¿En qué nos veríamos afectados nosotros en ese tipo de operación, más allá del movimiento de tránsito que veo que se va a impedir por algún periodo de tiempo? Pero, ¿en qué seria nocivo para la Ciudadanía la construcción de estas facilidades? Eso es lo que yo quisiera saber, para poderme expresar al respecto. Porque como les dije científicamente no voy a cuestionar nada y es impactante las conclusiones que ustedes han presentado en la tarde de hoy.

Daniel Rodríguez: Gracias, muchas gracias. Como bien mencionaste, el impacto va a ser mínimo, porque tenemos que cumplir con todas las exigencias de los reglamentos para el control de calidad atmosférica. Va a tener sus controles. No va a haber emisiones de gases que sean nocivos a la ciudadanía. Porque el propósito de esto es reducir y eliminar el riesgo, no añadirle de un medio a otro el riesgo. Va a haber impacto, sí, cuando estén instalando los equipos en las diferentes estructuras para atender la contaminación. Puede ser que el tráfico se afecte, ya sea el vehicular o el de las personas que van caminando por esas áreas. La operación de estos negocios dónde vamos a colocar los equipos se va a impactar. Pero entiendo que no va a haber un impacto a la salud pública porque se van a incluir las medidas para que eso no ocurra.

Elaine Rivera: Buenas noches mi nombre es Elaine Rivera, soy vecina de aquí en Joyuda. Yo tengo una serie de preguntas, como por ejemplo que ustedes indican que hay un riesgo de cáncer inminente. En base a la que ustedes están indicando, si miramos

el diagrama, es una población bien ancha lo que hay ahí. Entonces estoy viendo que son son 30 años para implementar todas estas medidas. Sé que en algún punto comentaron que iban hacer ciertas cosas, como quizás orientar a la comunidad, evitar que tomen del agua subterránea. Pero como que no veo muy claro, quizás necesito más tiempo para poder leerlo. Pero, ¿cuáles van a ser esas medidas para mitigar la exposición de las personas alrededor del área del plumacho? Yo tengo otras preguntas, pero no sé si me pudieran contestar.

Daniel Rodríguez: Déjame contestarte esa rapidito. Ahora mismo no hay un riesgo a la salud humana, porque se tomaron medidas a corto plazo, donde los pozos... Como les mencioné al principio, ninguno de los pozos que utiliza la Autoridad de Acueductos y Alcantarillados exhibieron contaminación por encima de los niveles máximos de Calidad de Agua. Solamente se detectó, y eso fue suficiente para que ellos alertaran a las agencias reguladoras de protección del ambiente para que tomásemos una acción, y no la tomásemos después que eso le llegara a los consumidores. El Departamento de Salud establece unos parámetros y la Autoridad de Acueductos y Alcantarillados tiene que cumplir con ellos. Pues ellos nos alertaron. Así que el único pozo que estuvo bien cercano a llegar al número máximo se sacó del sistema. Ese pozo durante el tiempo lo hemos estado monitoreando, y los niveles de contaminación que presenta en los pozos de extracción no llegan ni a la mitad del número mínimo establecido por los reglamentos. Déjame ir un poquito más allá. En cuestión de contaminación por los vapores de suelo, de estudios que hicimos de intrusión de vapor, no se determinó que ninguna de las estructuras que visitamos, y cogimos muestras excedían los números que presentaran riesgo a la salud, excepto 2 sitios donde está la contaminación. Donde entendemos se

originó. Donde está una de las fuentes. En esos sitios sí se determinó que estaba por encima del criterio para uso residencial, pero estaba por debajo del criterio para trabajadores. Así que si se usa para ese propósito no presenta un riesgo a la salud pública. Ahí se hacen unos estimados de tiempo. Una persona que vive en una casa pasa más tiempo, por lo tanto está más expuesto a esos gases que una persona que trabaja ahí ocho horas, cinco días a la semana. Así que entendemos que la contaminación, el problema, está controlado. Ahora mismo no debería haber exposición. Esto es a largo tiempo, al futuro. No podemos dejarlo así porque los niveles están por encima de los niveles de cernimiento, de lo que llamamos “screening”. Por lo tanto, tenemos que tomar acción para bajarlo y evitar que eso represente un problema de salud inaceptable a la población.

Elaine Rivera: Otra pregunta. En el plumacho que ustedes tienen en realidad fue bien puntual donde encontraron niveles, no toda la gente que está en el plumacho tiene ese riesgo.

Daniel Rodríguez: Exacto

Elaine Rivera: Si no que ese es donde ustedes determinan que puede estar la contaminación y que tienen que actuar.

Daniel Rodríguez: Exacto eso es lo que estimamos que pueda ser la extensión de ese plumacho

Elaine Rivera: Entonces yo tengo otra pregunta, es que están mencionando unas industrias. Verdad, en este caso, mencionan unas y mencionan otras. Y yo me pregunto

¿Cuáles son las restricciones o controles — si esas industrias están trabajando — que están tomando contra estas operaciones, para evitar que continúe, o que haya unas prácticas para evitar que, o recurra, o se controle esta contaminación?

Daniel Rodríguez: Los controles los establecen las agencias reguladoras en este caso, para cómo ellos tienen que manejar los materiales y tienen que manejar los desperdicios que ellos generan. En estas dos industrias hubo escapes. ¿Qué ocasionó el escape? Una de ellas cerro operaciones, ya no está, cerró, que es la lavandera. El Extasy Q Print sigue operando, pero no hemos visto aumento en la contaminación. Así que entendemos que ellos, quizás al ver las agencias reguladoras tomando acción, cogiendo muestras, pues se preocuparon y manejaron de una forma apropiada y adecuada cómo ellos manejaban esos desperdicios. Entiendo yo. Los mecanismos existen en el campo regulatorio, no en este que yo trabajo, para evitar que esas cosas ocurran. Pero depende grandemente de los operadores de estos comercios.

Elaine Rivera: Nos cuestionamos en paralelo en realidad cuáles son. Porque vemos todo el trabajo que va a tomar esto, pues paralelo, usted comentó que una primera fase quizás era controlar como tal, evitar. Como que no se ve en el plan cómo que no se documenta en ningún momento las medidas que se tomaron para frenar la fuente. Pero por lo que dicen, parece que fue un evento, no es algo que es recurrente, si no es algo que fue un evento de un escape, o algo, pero yo creo que estamos más claros. Que bueno que compartan el plan porque entiendo que es importante que lo leamos y poder someterle algún comentario más adelante. Gracias.

Daniel Rodríguez: ¿Algún otro comentario?

José Luis Sierra Ruiz: Buenas noches a todos. Mi nombre es Jose Luis Sierra. Soy representante de Extasy Print, uno de los lugares que encuentren una de las fallas tóxicas. La pregunta mía es, llevan tiempo haciendo estos estudios. Hicieron pruebas del suelo. Hicieron pruebas de todos los químicos que nosotros tenemos. Hicieron pruebas de gases, donde estuvieron días con unas bombas. ¿Qué otra cosa hicieron? Usaron a través del alcantarillado de Acueducto... Porque las descargas de nosotros… La descarga es cuando lavamos un marco, no va al suelo, va a la alcantarilla. Acueductos vino y certificó que eso iba, porque abrieron la alcantarilla de la calle, y el producto, como tiene un colorante, bajaba por ahí. Solamente, en todos estos años, la única recomendación que nos dio una de las personas que fue, era que pusiéramos otro extractor. Todos los productos que nosotros usamos… Hay espray que pueden tener tal vez los químicos que se presentan. Pero ninguno de estos químicos van al suelo. Me explico. Esto es un pote de “spray”, esto es un marco que es lo que nosotros utilizamos. Le echamos al marco, le pasamos el paño, y el paño va al zafacón. No es que hay una manguera que esté echando y corriendo el producto por el suelo. El gas… El líquido, el gas propano no, el gaseoso, el líquido. Lo utilizamos para limpiar los marcos, porque es de pintura, pinturas a base de agua. De la misma manera, Se saca el exceso de la pintura, se guarda en el pote, no se daña, si no pasa de una temperatura no seca. Para limpiarlo se usa un paño con gas, se limpia, el paño va al zafacón. O sea, no hay una descarga nunca en el suelo. ¿Qué productos o qué había anteriormente en el edificio? Porque aquí en Cabo Rojo hay más de seis compañías que hacen la misma labor de nosotros. Nosotros llevamos en este edificio 26 años y los productos siempre han sido los mismos y nunca el producto cae al suelo. Ni el gas. Ni el spray, que puede ser el

espray el único que tenga uno de los componentes. Según lo que investigaron en aquel momento, hace dos años, nos dijeron que estaban buscando un producto como los que usaban antes los mecánicos para lavar los carburadores. El meta…meta… ay no sé, no me acuerdo. Pero ese producto no se utiliza. Cabo Rojo, no estoy justificando nada, pero Cabo Rojo está lleno de buenos mecánicos, los productos que utilizan para lavar motores y sus carros, que no se sabe dónde echan esos desperdicios. Como representante de Extasy Print, le solicito y le pido que vuelvan de nuevo. Yo le puedo facilitar las latas de pinturas para que vean los componentes, los "sprays", y para que vean cómo es que se utilizan de nuevo. Porque entiendo que aunque nosotros estamos allí, no somos los que estamos contaminando el suelo. Si hubiera sido así, tal vez alguna agencia nos hubiera dicho "mira este producto no lo puede utilizar por esto, esto y esto" y buscamos en las compañías cuáles son las alternativas para remediarlo. Lo único que me dijeron fue "pon otro extractor". Hace como una semana fue un caballero, inspector de Calidad Ambiental, Sr. Javier Mercado. Nos visitó. ¿No está aquí? Y dijo: "¿dónde está la chimenea? Yo fui a enseñarle el extractor. "Pero esto no suelta humo". Nosotros no quemamos nada, ni tampoco tenemos vapores para expedir. El extractor que usamos nosotros lo usamos para sacar el calor que se encierra la estructura y tal vez también cuando la camisa, se funde la pintura con la fibra de "T-shirt", que suelta un poco de olor, para sacar el olor, para nosotros no absorberlo todo el tiempo. Y me dijo "pero aquí no hay humo". Y yo: "no si no hay humo". "¿Y dónde está la chimenea de humo?". Nos gustaría que de alguna forma nos volvieran a visitar en el local. Vuelvan a hacer - de hecho en el local hay un pozo abierto que a menudo van y monitorean, que no tiene que ver nada con el taller porque está alejado. Dentro del local hicieron más de 16 pruebas, en el terreno,

aún donde se limpia, que es exactamente por aquí *(Nota de la transcriptora: se está refiriendo a uno de los mapas que tienen exhibidos en la parte del frente de la tarima)* Es en esta partecita aquí.

Daniel Rodríguez: Déjame ver si te consigo la gráfica para que la puedan ver en la pantalla, y todas las demás personas puedan verla. *(Nota de transcriptora: Daniel busca la laminilla número 15 de la presentación)*

José Luis Sierra Ruiz: Exacto. En esa área. Pero nos gustaría saber qué producto en específico es el que crea esa supuesta contaminación. Volviendo a lo que nos explicaron hace como año medio atrás, uno de los que estaba haciendo las pruebas… Nada voy a hablar al azar como si fuera el mapa… Él nos explicó de la contaminación está en varios puntos del área de Cabo Rojo. No entiendo de qué forma, si el "flow" subterráneo de agua va corriendo por toda la geografía de Cabo Rojo, que de la casualidad que en dos puntos en específico contaminan, cuando el otro está aquí, el otro está acá. Aunque en pequeñas cantidades. No sabemos si es que en el pasado, hacen 20, 30, 40 años una descarga grande de drones, o de lo que fuese, en algún sitio específico y eso haya contaminado toda la vena de agua que corre. Me gustaría, como representante de Extasy Q Print, que nos visitaran. Siempre las puertas están abiertas para todo tipo de estudios. Y que nos digan qué producto en específico es el que se asemeja a ese producto que está contaminando la vena de agua. Para poder remediar o eliminar lo que sea.

Daniel Rodríguez: Comentario notado. Vamos a estar contestando el comentario que acaba de hacer en esta noche. Esto va a ser parte del récord.

José Luis Sierra Ruiz: Gracias

Daniel Rodríguez: ¿Algún otro comentario?

Manuel Portela: Mi nombre es Manuel Portela. Yo soy residente de Cabo Rojo, del área específico de Buyé. Mi pregunta se desvía un poquito en específico de lo que estamos ateniendo aquí ahora del casco urbano de Cabo Rojo. Pero para efectos de récord, yo quiero, número uno hacerle saber que estamos en la mejor disposición para ayudarlos en lo que sea, porque queremos proteger el ambiente, y estamos en disposición de ayudarlos en esa dirección. Mi pregunta es ¿hay algún estudio en progreso o algún estudio proyectado para atender la situación de la planta de tratamiento que está en el área de Buyé? Que contamina toda aquella área y toda aquella playa en específico de los dos edificios que están allí, que descargan en esa planta de tratamiento. Que cada vez que llueve contamina toda el área, inclusive la playa. ¿Hay algún estudio proyectado para atender la situación con la planta de tratamiento que está en Villa Taína? que también siempre que se desborda, cada vez que llueve, contamina toda aquella área, porque el tubo que desagua las aguas, supuestamente tratadas de la planta de tratamientos, que usualmente, por muchos años, lo echaba al centro de la bahía, está roto ahí mismo donde está la rampa de Villa Taína y cada vez que llueve aquello se llena de aguas negras. pues yo quería traer esta para conocimiento del récord. Mi pregunta es ¿se va a atender eso como se está atendiendo esto en el casco urbano? Porque ese nos preocupa a los residentes del área de Buyé y del área de Villa Taína. Esas plantas de tratamiento no cumplen, definitivamente, con tratar el agua bien. Por eso es que tenemos que siempre hay bandera roja de contaminación en la playa de Buyé. Tan linda

que se ve, pero ahí nos bañamos en agua de excremento de esas plantas de tratamiento que no sirven.

Daniel Rodríguez: Le estaremos pasando estos comentarios a personas dentro de la Agencia que bregan esos programas, que trabajan con esos programas, para que ellos te puedan atender la inquietud que tú estás presentando en esta noche. Porque esto está fuera del propósito del trabajo que yo tengo bajo encomienda.

Manuel Portela: Gracias y aprovecho porque somos representantes de la comunidad aquí y como ustedes son representantes de la EPA, pues. Pero está muy bien lo que están haciendo, me gustaría que eso ocurriese también en el área donde hay un foco de contaminación tan grande como el que hay en Buyé y Villa Taína.

Daniel Rodríguez: Gracias por el comentario.

Randy Toro: Buenas noches a todos yo me llamo Randy Toro resido en el área de la Bajura, cerca de uno de los pozos que está identificado ahí. Mi preocupación y mi presencia es por la situación que está habiendo de la contaminación actualmente. Que creo yo que tiene que ser más en otro lado. No entiendo que sea una sola área específica, como la que se está mostrando aquí. Pero es como la opinión que hizo un compañero, la primera opinión, no tenemos el conocimiento para uno irse a la segura. Solamente tomando un muestreo de agua y llevándolo a un laboratorio. Pero si entendemos que en este momento es potable, se puede tomar, uno puede incurrir en la situación normal y común y corriente en esas. Que no es una situación adversa a eso. Las escuelas que se encuentran al dorso, un pre-kinder que hubo aquí también, ¿no corrieron ningún riesgo de la contaminación que hay, entre comillas? Bueno, según se

entiende aquí. Que para mí no creo que sea el único sitio que esté contaminando. Porque aquí estas venas corren por todo Cabo Rojo, así que deben de haber más sitios. Que se encuentre presente en esta área es otra cosa.

Daniel Rodríguez: Quiero volver a recalcar que los niveles de contaminantes de volátiles orgánicos clorinados que acueducto detectó estaban por debajo de los estándares del gobierno de Puerto Rico y de los estándares federales. En ningún momento la fuente de agua presenta un problema de salud pública a la comunidad que utiliza el sistema de pozos urbanos en Cabo Rojo. Entendemos que uno de los pozos tenía la concentración más alta pero con todo y eso estaba por debajo de los estándares y se sacó del sistema porque entendíamos que podía estar moviendo el plumacho de la contaminación en esa dirección, por la extracción agresiva que ese pozo tenía. Por lo tanto, el agua de Cabo Rojo, entiendo yo, por el problema de esta contaminación, no está siendo afectada. Estos son acciones futuras. No podemos dejar la contaminación que está en el sitio, porque presenta un riesgo si no tomamos acción. Eso es lo que estamos proponiendo, tomar acción contra esa fuente para reducir ese riesgo o eliminarlo. En muchas de las estructuras aledañas a donde se encontró esta contaminación hicimos estudios de vapor intrusivo dentro de las estructuras, dentro de casas. En el 2011 investigamos 29 estructuras, 29 comercios, oficinas, residencias, y no encontramos que hubiese un problema de calidad de aire ocasionado por la contaminación que está en el agua subterránea, que está pasando por debajo en donde esa gente trabaja y vive. El único sitio donde se detectó que pudiera ser un problema fue donde identificamos las dos fuentes potenciales que son Extasy Q Print y Cabo Rojo Professional Dry Cleaners. Cabo Rojo Professional Dry Cleaners está vacante. En Extasy Q Print el riesgo que se

demostró que excedía era para el de Residentes, no para el de comercio, y ahí nadie reside, es una actividad comercial. Por lo tanto, entendemos, con la información que tenemos, que no existe en este momento, un riesgo a la salud pública por la contaminación que está en el agua subterránea. Pero no por eso no vamos a hacer absolutamente nada, vamos a tomar acción. Esa es la acción que estamos proponiendo en esta noche.

Daniel Rodríguez: ¿Algún otro comentario?

Cinthia Martinez: Buenas noches mi nombre es Cinthia Martínez, yo represento a Fomento Industrial, y quería saber si esas alternativas de remediación que ustedes están presentando incluyen también el plumacho que está cerca de PRIDCO.

Daniel Rodríguez: El plumacho que está cerca de PRIDCO, de las instalaciones de fomento industrial está al norte. Lo que se está proponiendo es monitoreo de ese plumacho. No incluye el remedio más agresivo que estamos proponiendo para las áreas en el casco urbano.

Cinthia Martínez: Ok gracias

Celys Irizarry: Buenas, mi nombre es Celys Irizarry, antigua residente en Cabo Rojo y estudiante también, muchos años, grado de maestría de Ingeniería Ambiental. La pregunta va dirigida a saber si existe algún tipo de campaña educativa para estas personas, de estos locales que manejan este tipo de químico, para que ellos puedan tener esos controles de manejo, en los diferentes tipos de químicos que tienen, para evitar que en principio ocurran estos problemas de contaminación. Que quizas pueda

haber desconocimiento del público, que no te exime a lo que es el cumplimiento pero que quizas puede evitar ciertos problemas en el futuro de este tipo.

Daniel Rodríguez: Yo desconozco si hay una campaña para proveerle asistencia en conocimiento. Pero sí entiendo que las diferentes industrias tienen sus organizaciones que traen estos asuntos a los que pertenecen a ese tipo de industria. También entiendo que las agencias reguladoras también tienen programas de asistencia a los diferentes tipos de industrias por el desperdicio que genera. Tenemos información en la página de internet de la Agencia que yo trabajo, la Agencia de Protección Ambiental, de medio ambiente, Federal donde, dependiendo el sector que tú trabajas, tú puedes conseguir información para los desperdicios típicos que generarían ese tipo de industria. Así que hay información allá afuera que ellos pueden utilizar para aumentar el conocimiento de cómo manejar sus materiales, sus productos, y sus desperdicios.

Celys Irizarry: Gracias.

Daniel Rodríguez: ¿Algún otro comentario?

Roberto Ramirez: Buenas noches, mi nombre es Roberto Ramírez, soy el alcalde de Cabo Rojo. Quiero darle las gracias a la EPA por estar en esta charla. El municipio ha estado trabajando desde antes del 2011 o 2012 que empezó esta situación. Cuando llegué a la alcaldía en el 2013 la EPA ordenó mover el “child care” o el “Head Start” que teníamos contiguo, aquí al lado. Se movió a lo que se había construido para los Juegos Centroamericanos en la Pista Relin Sosa. Allí están los niños separados en una estructura. Fue recomendación que hizo la misma EPA de Nueva York que se comunicó con nosotros. Luego de eso entró una compañía a hacer el muestreo y a hacer los pozos.

Estuvo ubicado el vagón por mucho tiempo en la zona industrial, llevando a cabo toda la información. El municipio se mantuvo, tanto con acueductos — que el pozo que está cerca aquí también era, como usted dijo, el que tenía los volúmenes más altos de los solventes clorinados — y hemos estado pendiente a la ciudadanía. Entiendo que, sé que Acueducto lo ha hecho, pero la gente tiene mucha credibilidad en la EPA. Debiesen de sacar unos comunicados frecuentes de cómo está ese muestreo para que la comunidad, como bien trajo la ciudadana — usted fue, (*Nota de transcriptora: señala Señora en el público)* o alguien que habló — de cómo se podía mantener a la ciudadanía informada de qué está ocurriendo con este monitoreo. Creo que sería adecuado, una recomendación, que se envíe — si nos las envía al municipio, lo hacemos con mucho gusto, a través de los medios que tenemos, tanto de radio, de programas de radio, las redes de Facebook, y nuestra página del municipio — para que la gente se mantenga informada. Ella fue la que estuvo aquí *(Nota de transcriptora: señala a Frances Delano en el público)* desde el 2013 más o menos, trabajando con el Superfondo. Así que hemos estado en colaboración en todo momento para lo que se busca de la investigación, que es ver quién fue el que ocasionó esta situación ante la ciudadanía de Cabo Rojo. El agua, como usted bien dijo, y Acueducto, aún durante la emergencia en la que nosotros estábamos en repartición de agua, a través de los tanques que son certificados por el Departamento de Salud. Pero antes de que se le echara una gota de agua, el Departamento de Salud, o Acueductos, tiene que hacerle un análisis de agua. Antes de distribuirse a la gente, para que sea potable. Que sea un agua que sea segura, para que la gente pueda tomarla. Así que le damos las gracias por estar aquí en la noche de hoy. El municipio está en entera disposición de seguir colaborando para que podamos

resolver, de una vez y por todas, dada la situación, de que esta área de nuestro pueblo, depende de esos pozos profundos. No sé si él lo dijo, pero son 16,000 residencias que se nutren de este servicio. Cabo Rojo tiene tres fuentes de donde llega el agua. Viene de Mayagüez que es la parte de Guanajibo, 1,700 residentes que toman agua del área. Y 7,000 que viene del Lago de Lucchetti, a través de los canales de riego, y es tratada allí en el área de Betances. Así que este medio de la ciudad es el que se nutre de los pozos profundos de agua. Gracias, gracias por estar aquí.

Daniel Rodríguez: Gracias señor alcalde. Quiero agradecer al Municipio de Cabo Rojo porque nos han brindado mucha ayuda durante la etapa de investigación. Facilitándonos sitios para reunión. Ayudándonos con el control del tráfico, cuando estábamos instalando los pozos y cogiendo las muestras. Así que se le agradece toda la ayuda que nos brindó durante esa época y permitiéndonos el uso de esta biblioteca, para mantener uno de los repositorios y para la reunión de esta noche. Muchas gracias.

Elaine Rivera: Yo soy Elaine Rivera, vecina de aquí de Joyuda. Yo tengo un comentario. Es para darle las gracias a ustedes, porque quizás no lo comentaron al principio, pero el Superfondo es unos fondos federales que todo el mundo lucha. Todo el mundo quiere que sus sitios contaminados cumplan con este criterio. Me explico, cumplan con el criterio de que le puedan dar fondos para esto. Yo sé que es una batalla que ustedes tienen. Porque todo el mundo quiere que sus sitios sean Superfondo, y tengan esto. Así que gracias por compartir con nosotros toda esta información, y el hecho de que hayan colocado esto como un sitio Superfondo, para que venga todo ese dinero, para ayudar con esta limpieza.

Daniel Rodríguez: Gracias por el comentario. ¿Algún otro comentario? Muchas gracias por participar esta noche de esta reunión. Doy la reunión por terminada. Gracias

Se dan por terminadas las labores y se cierra record a las 7:29pm.

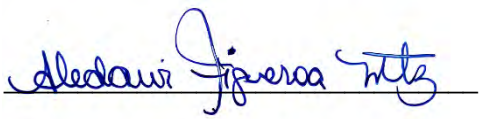
CERTIFICADO DE TRANSCRIPTORA

Yo, Aledawi Figueroa Martínez, transcriptora de Smile Again Learning Center, Corp. CERTIFICO:

Que la que antecede constituye la transcripción fiel y exacta de la grabación realizada durante la reunión celebrada en el sitio y la fecha que se indican en la página uno de esta transcripción.

Certifico además que no tengo interés en el resultado de este asunto y que no tengo parentesco en ningún grado de consanguinidad con las partes involucradas en él.

En Isabela, Puerto Rico, a 15 de agosto de 2018.



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MEMORANDUM

Prepared by: **Raúl Colón, P.E., P.H.**
Caribe Environmental Services

Subject: **Technical Evaluation**
Cabo Rojo Groundwater Contamination Superfund Site
Cabo Rojo, Puerto Rico
EPA Facility ID No. PRN000206319
CES Project No. 12-0021

Date: September 1, 2018

As requested by the Puerto Rico Industrial Development Company (PRIDCO) Caribe Environmental Services (CES) has evaluated the following reports prepared, on behalf of the Environmental Protection Agency (EPA) for the referenced site, by CDM-Smith:

- Final Remedial Investigation Report, Cabo Rojo Groundwater Contamination Site, Remedial Investigation/Feasibility Study, Cabo Rojo, Puerto Rico; CDM-Smith, April 10, 2018.
- Final Feasibility Study Report, Cabo Rojo Groundwater Contamination Site, Remedial Investigation/Feasibility Study, Cabo Rojo, Puerto Rico; CDM-Smith, June 1, 2018.
- Superfund Program Proposed Plan, Cabo Rojo Groundwater Contamination Superfund Site, Cabo Rojo, Puerto Rico; EPA August 2018

Following are CES's comments to the RI/FS reports:

- **Remedial Investigation (RI) Specific Comments**

  - The RI document presents the following two distinct contamination plumes, which are summarized in the 2018 EPA Proposed Plan Document (PPD), and depicted in ***Figures 4-5b and 4-6*** of the RI (attached):

    - ***Plume 1*** is the groundwater plume to the north, encompassing the Cabo Rojo Professional Dry Cleaners (CRPDC) and Extasy Q Prints (EQP) source areas and the Ana Maria well, consisting mainly of PCE, TCE, and cis-1,2-DCE. The highest concentrations of PCE, TCE, cis-1,2-DCE, and vinyl chloride were detected in an alluvial well at CRPDC in Round 1. VOC concentrations in the alluvium were lower in Round 2, but remained above screening criteria. In this plume sub-slab and soil samples showed high concentrations

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of the Chemicals of Concern (COC) and the EPA indicates that the presence of contaminant mass in both the vadose zone and groundwater indicate that CRPDC and EQP **are continuing sources of groundwater contamination.** As a matter of fact, both ***Figures 4-5b and 4-6*** show a direct connection between the plume and the CRPDC and EQP facilities.

- ***Plume 2*** is the groundwater plume identified in the south area which consists of a 1,1-DCE plume near PRIDCO East. The RI indicates that the presence of 1,4-dioxane and 1,1- DCE in the saprolite groundwater at the PRIDCO East facility suggest a historical source of groundwater contamination that can be linked to downgradient bedrock detections of 1,4-dioxane and 1,1-DCE through fractures in bedrock, allowing contamination to migrate through preferential pathways. However, the RI indicates that the observed 1,4-dioxane concentrations did not yield any risk or hazard above EPA's thresholds to human health or the environment, and was not considered as a COC for Plume 2.

  A review of both ***Figures 4-5b and 4-6*** do not show a direct connection between the Plume 2 and the PRIDCO East property. As a matter of fact, the southern limit of the plume, as shown on both figures, is located down-gradient of well MW-18R which is the closer down-gradient well to the PRIDCO property. As shown in ***Figure 4-5b***, the plume southern edge is located approximately 200 ft from the PRIDCO property.

- ***PRIDCO East as a source of the Plume 2 contamination***: The RI indicates in Section 7.1.2, that this property is the source area identified for Plume 2. It indicates that based on previous site uses and historical presence of DCE in soil vapor, PRIDCO East is also considered to be a source of the 1,1-DCE groundwater plume seen in wells MPW-9R and MW-19R located down-gradient of PRIDCO East. 1,1-DCE was not detected in the shallow background monitoring well MW-10 or in bedrock background well MW-21R. 1,1-DCE concentrations in downgradient bedrock monitoring wells MPW-9R and MW-19R range from 14J to 34 µg/L. This EPA's explanation does not consider the results obtained in well MW-18R.

  This EPA's explanation seems appropriate if only the results of the two down-gradient wells MPW-9R and MW-19R are considered. However, when considering the results obtained by the EPA at well MW-18R, this explanation does not seem accurate. MW-18R was installed by CDM Smith, in 2017, after the Round 1 sampling event in 2014. This well was installed just down-gradient of the PRIDCO East property buildings. According to the RI information, this well was installed and screened in the fracture bed rock at a similar depth as well MW-19R and within the depths of Ports 1 and 2 of well MPW-9R.

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The results presented in the RI for well MW-18R indicate that on Round 2, first time that it was sampled, 1,1 DCE was not detected. However, wells MPW-9R showed 1,1 DCE detections ranging from 14 to 25 ug/L and well MW-19R showed a 1,1 DCE concentration of 34 ug/l. 1,1 DCE was detected in wells MWP-9R and MW-19R at all depths sampled ranging from 104 to 168.5 ft-bgs. These data suggest that the 1,1 DCE contamination in the fracture rock is wide spread within the fracture zone. Therefore, if the PRIDCO East property is a source of the contamination and the fracture rock is widely impacted, as suggested by the collected data, it would be expected that MW-18R would show 1,1 DCE during the Round 2 sampling, when it did not.

Furthermore, when analyzing the Post-Maria results presented in Table 4-8 of the RI a similar behavior, as found during the Round 2 sampling event, is noticed. MPW-9R showed 1,1 DCE detections ranging from 16 to 30 ug/L and well MW-19R showed a 1,1 DCE concentration of 40 ug/l. 1,1 DCE was detected in wells MWP-9R and MW-19R at all depths sampled ranging from 104 to 168.5 ft-bgs. However, MW-18R showed a 1,1 DCE concentration of 0.57 ug/L. The data indicates that concentrations of 1,1 DCE increased down-gradient after the Maria Hurricane.

The bedrock wells sampling results down-gradient of the PRIDCO site, in conjunction with the fact that the highest concentration of 1,1 DCE detected at the groundwater underlying the site was 0.58 ug/L, suggest that the PRIDCO property does not appear to be the source of the contamination found by EPA in Plume 2. These data suggest that a potential source area exist down-gradient of the PRIDCO property that EPA has not identified yet.

- ***Dilution and Dispersion*** – In the discussion of the Conceptual Model (CM) presented in the RI for the fate and transport of Plume 2, it is indicated that dilution and dispersion is expected to be significant in the saprolite and highly fractured bedrock zones, and that dilution and dispersion are expected to be active mechanisms for reducing plume concentrations moving downgradient. The RI indicates that the highest concentrations in Plume 2 were found in the fractures in the competent bedrock. Ambient groundwater flow is relatively slow in these fractures; hence, contamination is expected to migrate slowly with minimal to moderate dilution and dispersion. Concentration reductions in Plume 2, however, are still more likely dominated by dilution and dispersion.

  This hydrogeologic model, as described by in RI, cannot explain why the fracture rock immediately downgradient of the PRIDCO site is not significantly impacted with 1,1 DCE and wells located further downgradient show 1,1 DCE concentrations orders of magnitude higher than those found at the PRIDCO site (and immediately

down-gradient of the site) and increasing as moving down-gradient. If the PRIDCO site is the source of the contamination found in Plume 2, and dilution and dispersion is the main mechanism of contamination movement down-gradient, as indicated in the RI, and if no other source(s) are located down-gradient of the PRIDCO site, you would expect for the 1,1 DCE concentrations to be higher at the PRIDCO site area and showing a reduction trend as it moves down-gradient where the volume of water for the dilution process increases. This is not what the data collected down-gradient of the site suggest. As previously discussed, as you move down-gradient, the 1,1 DCE concentrations increase instead of being reduced.

By the same token, if groundwater flow is relatively slow in the component rock fractures and the contamination is expected to migrate slowly with minimal to moderate dilution and dispersion, concentrations at the PRIDCO site would be expected to be higher than those detected down-gradient and also would be showing a reduction trend as it moves down-gradient, which is not what the available data indicate.

Again, the conceptual model for the site, in our opinion, is missing a potential source area, down-gradient of the PRIDCO East site, that would explain why the well immediately down-gradient of the PRIDCO site show non-detect or very low concentrations of 1,1, DCE and how the 1,1 DCE concentrations are increasing down-gradient instead of being reduced by the dilution process.

- ***Site Historical Uses***: As part of the response to the Request for Information (RFI) provided by PRIDCO to the EPA in October 2012, a detailed evaluation of the PRIDCO files for the tenants that occupied the PRIDCO East property was conducted. The investigation included all the buildings located at this property identified by PRIDCO as L-122-0-58-00/L-122-1-64-00. This industrial park is composed of 12 industrial lots with buildings constructed in 11 of the lots at different times. Lot No. 12 is not developed and it has been used as a parking area. PRIDCO's evaluation included buildings: T-0445-1-58 and T-0445-1-68; T-0667-0-64-01 and T-0667-0-64-02 (which was sold to Ebanistería La Caborrojeña); S-0961-0-68 and S-0961-1-79; T-0636-0-63, T-0636-1-66, T-0636-2-67 and T-0636-3-68; S-1338-0-82; T-0819-0-69; T-0962-0-70 and T-0962-1-78; T-1286-0-80; S-1167-0-74; S-1105-0-73; and T-099500-70.

  PRIDCO files indicated the following uses for some of the buildings: T-0667-0-64-01 and T-0667-0-64-02 manufacturing of kitchen cabinets, wooden furniture and plastic bags; S-0961-0-68 & S-0961-0-79 for manufacturing of residential, commercial and industrial breakers and other electrical parts by Cutler Hammer; T-0962-0-70 & T-0962-1-78 manufacturing of electrical products by Westinghouse, manufacturing of circuit breakers by IVI Mfg. Inc. and manufacturing of circuit breakers and

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receptacles by Cutler Hammer; T-1286-0-80 low voltage switches manufacturing by ICO de PR, Inc; S-1167-0-74 manufacturing of circuit receptacles by Westinghouse, manufacturing of circuit receptacles by ICO P.R., Inc. and manufacturing of circuit receptacles by Cutler Hammer; S-1105-0-73 manufacturing of electric products by National Semiconductors de PR and voltage receptacles manufacturing by Cutler-Hammer; T-0995-0-70 manufacturing of electrical products by Westinghouse, ICO PR Inc. (a division of WPRI) apparently the same activity as Westinghouse, manufacturing of electrical products by Cutler Hammer.

The investigation conducted by PRIDCO for the October 2012 RFI response indicated that all the data available in the PRIDCO files did not indicate the historical usage of chlorinated solvents by any of the tenants that occupied the PRIDCO East buildings.

The PRIDCO East site was the subject of three investigations conducted by the EPA as follows:

- April 10-23, 2013 – this investigation shows detection of PCE in two of the samples collected between buildings S-1167 and T-0962. The concentrations detected were 49 and 52 ug/m^3 at depths between 7.5 to 9 ft-bgs.
- April 18 to May 9, 2013 – this investigation showed detection of 1,1 DCE in soil at a concentration of 620 ug/Kg. The sample was located to the north west of Building T-0995. In addition, at a sampling point to the north west of Building T-0995, 1,1 DCE was detected in groundwater at concentrations of 49 and 90 ug/L at the intervals of 20-24 and 13-17 ft-bgs, respectively.
- May 13-16, 2013 – three soil borings were drilled and no detection of VOCs was reported.
- January-February, 2017 – This investigation included the collection of soil and groundwater screening samples along two transects at the PRIDCO East property (Transects T1 and T2). Even though, no COC were detected in the soil samples, the ground water screening samples showed concentrations of 1,1 DCE; TCE; and cis 1,2 DCE.

The available data collected by EPA for the PRIDCO East site, during the RI process, suggest that it is likely that chlorinated solvents may have been used by some of the tenants that occupied the PRIDCO property. Also, the RI data suggest that apparently there are no sources of chlorinated solvents in the area up-gradient of the PRIDCO Property. The results of the wells located up-gradient of the PRIDCO property wells MW-10 and MW-21R, installed in the overburden and fracture bed rock, respectively, did not show detection of chlorinated solvents (including 1,1 DCE) during the sampling events.

However, the low concentrations of this compound detected in the soil and groundwater underlying the PRIDCO site do not appear to be or to have been in the past, the source of the contamination detected at the Plume 2 area. In fact, the detected 1,1 DCE concentrations at the PRIDCO site are orders of magnitude lower than those detected farther down-gradient of the park. It appears that if releases of this compound occurred at the PRIDCO site, they were relatively small and not sufficient to produce the 1,1, DCE concentrations detected by the EPA in wells MPW-9R and MW-19R. The results reported in the RI for well MW-18R, which is the closest down-gradient well to the PRIDCO Site, in our opinion, support this conclusion. The available data do not establish a direct connection between the detections at the PRIDCO site and the detections in the down-gradient wells. The data suggest that a source(s) of contamination, down-gradient of the PRIDCO site appears likely.

- The risk assessment evaluation included in the RI indicates that the Reasonable Maximum Exposure (RME) cancer risks for future Plume 2 residents are at the upper end of EPA's acceptable cancer risk range when both rounds of data are used. The Central Tendency Exposure (CTE) cancer risks are within EPA's acceptable cancer risk range. Both RME and CTE cancer risks are within EPA's acceptable cancer risk range when only the most recent (Round 2) data are used. Estimated RME cancer risks for workers using Plume 2 groundwater are within EPA's acceptable cancer risk range. RME noncancer hazards for all future receptors using Plume 2 groundwater are below EPA thresholds.

  The risk assessment results indicate that the 1,1 DCE found at the Plume 2 area does not represent a risk to the human health and the environment.

- **Feasibility Study (FS) Specific Comments**

  - The FS evaluates two active remedial alternatives, in addition to the No Action alternative, described as:

    - Alternative 2: Soil Vapor Extraction (SVE)/Dual Phase Extraction (DPE), Monitored Natural Attenuation (MNA), Long-Term Monitoring, Contingency for In Situ Treatment – DPE and/or SVE wells would be installed at CRPDC and EQP to extract contaminated vapors from vadose zone and contaminated shallow groundwater. The contaminated vapors and groundwater would be treated aboveground to meet permit requirements prior to discharge. Vapor monitoring points would be installed in the treatment zone to monitor the performance of the remedy. Additionally, the SVE/DPE remedy would serve to mitigate potential vapor intrusion into the CRPDC and EQP buildings. The precise locations of the SVE/DPE wells would be confirmed during the remedial design. If PDI and/or groundwater monitoring results indicate the

need for more active treatment of contaminated groundwater in Plume 1, Alternative 3 would be implemented.

- Alternative 3: SVE/DPE, In Situ Treatment, MNA, Long-Term Monitoring – This alternative would include every remedy component listed in Alternative 2, with the addition of in situ treatment of a broader and deeper zone of contaminated groundwater within the CRPDC and EQP source areas. The groundwater plume contaminated with COC concentrations over one magnitude above the PRGs would be remediated using in situ treatment. A pilot study of the in-situ remedy would be conducted prior to full-scale implementation.

We note that none of these two alternatives include the Plume 2 area. According to the FS no recent soil contamination that could serve as a continuing source for groundwater contamination was identified for Plume 2. Because groundwater contamination at Plume 2 is low, it is considered a dilute plume. Furthermore, the human health risk assessment indicated that risk from groundwater contamination in Plume 2 is within EPA's acceptable risk range; therefore, Plume 2 will not be considered for active treatment. Long-term monitoring of Plume 2 will be conducted to monitor groundwater concentration trends, evaluate natural attenuation, and ensure continued protection of human health and the environment.

We agree with the proposed approach for addressing the Plume 2 contamination.

- Section 1.8.2 of the FSA indicates that for Plume 2, in the saprolite zone, groundwater screening samples at PRIDCO East exhibited concentrations of 1,4-dioxane and 1,1-DCE at concentrations up to 12 µg/L and 1.3 µg/L, respectively. The saprolite contamination is likely linked to downgradient bedrock detections of 1,4-dioxane and 1,1-DCE through fractures in bedrock, allowing contamination to spread through preferential pathways. The contaminants were detected in bedrock wells downgradient of PRIDCO East at concentrations up to 58 µg/L for 1,1-DCE (MW-18R, Round 1) and up to 9.3 µg/L for 1,4-dioxane (MPW-9R, Round 2).

  The data included in the above paragraph for well MW-18R is not accurate. This well has never had a detection of 58 ug/L of DCE. This concentration was detected in well MPW-9R located further down-gradient of the MW-18R location, during the Round 1 sampling. MW-18R showed ND for 1,1 DCE in the Round 2 sampling event and a concentration of 0.57 ug/L during the Post Maria sampling event. The non-detection or very low concentrations of 1,1 DCE in well MW-18-R relative to the much higher concentrations detected in further down-gradient wells MPW-9R and MW-19R, is indicative of a source of chlorinated solvent down-gradient of the PRIDCO site not associated with the PRIDCO industrial park.

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- **Site Visit**

  To investigate the potential location of source areas down-gradient of the PRIDCO East Park, Eng. Colón conducted a visit to the PRIDCO East site on August 31, 2008, with Mrs. Karen Fornes of PRIDCO. We visually inspected the areas up-gradient and down-gradient of the PRIDCO park and spoke to several neighbors of properties located down-gradient of the PRIDCO park. Our observations indicate that presently there are several mechanical shops, including auto body shops, located down-gradient of the Park (between the park and the PR-103 and PR-308 Roads intersection) and up-gradient of the park. According to the owner of an Agro-Centro located near the PR-103 and PR-308 intersection, three mechanical shops operated at the lot either adjacent or up-gradient of an abandoned gasoline station located along the PR-103 Road. For reference, well MW-19R, installed by the EPA, was observed located in the sidewalk to the west of this gasoline station. He indicated that these mechanical shops operated approximately from the 1960's to the 1980's and they were closed several years ago. He recalls the names of the shops as Maguiche, Rebelde and Nestor López. It is well known that old mechanical shops typically used and managed large quantities of chemical substances (including chlorinated solvents). Our experience indicates that housekeeping practices as well as hazardous wastes management in these old facilities was not typically adequate. Therefore, further evaluation of the areas where theses old mechanical shops were operated should be conducted.

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References

- "An Illustrated Handbook of DNAPL Transport and Fate in the Subsurface"; B.H. Kueper, Dr. G. P. Wealthall, J.W.N. Smith, S.A. Leharne and D.N. Lemer; environmental Agency R&D Publication 133; June 2003.

- "Dense Chlorinated Solvents", James F. Parkow and John A. Cherry, Waterloo Press 1995.

- "An Introduction to Characterizing Sites Contaminated with DNAPLs", The Interstate Technology and Regulatory Council (ITRC) - Dense Nonaqueous Liquids Team, September 2003.

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FIGURES

Screening Criterion	
Analyte	GW (µg/L)
PCE	5
TCE	5
cis-1,2-DCE	70
1,1-DCE	7
Vinyl Chloride	0.25
1,4-Dioxane	0.46

USGS-OW1

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
25-35	**0.86**	0.5U	0.5U	0.5U	**44**	**0.17J**

MW-16

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
30-40	0.2U	0.5U	0.5U	0.5U	0.5U	0.25U

ANA MARIA

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
75	**0.93**	0.5U	0.5U	0.5U	0.5U	0.25U

MW-1

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
28-38	0.2U	**7.9**	**1.7**	**2.5**	0.5U	**0.14J**

POZO ESCUELA

Port	Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
1	39-59	**0.63**	**1.5**	**0.51**	**0.55**	0.5U	**0.037J**
2	79.5-86	**0.65**	**1.3**	**0.26J**	**0.27J**	0.5U	0.5U
3	89-96	**0.3**	**5.1**	**0.79**	**0.68**	0.5U	0.5U
4	157-162	**1.2**	**0.57**	0.5U	0.5U	0.5U	0.5U

MW-2

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
16-26	**0.38**	**4.2**	**1.5**	**1.9**	0.5U	**0.11J**

MW-15

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
45-55	0.21UJ	**16**	**4.2**	**4.1**	0.5U	**0.34**

MW-4

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
45-55	0.2U	**27**	**10**	**44**	0.5U	**1.2**

MW-4R

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
90-100	0.21UJ	**71**	**18**	**18**	0.5U	**1.2**

MW-7

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
30.58-40.58	0.21UJ	0.5U	0.5U	0.5U	0.5U	0.25U

MW-19R

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
110-120	**8.4**	0.5U	0.5U	**0.35J+**	**34**	**0.019J**

MW-11

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
22-32	0.21UJ	0.5U	0.5U	0.5U	0.5U	0.25U

MW-12

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
17.67-27.67	0.2UJ	0.5U	0.5U	0.5U	0.5U	0.25U

MW-10

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
33-43	0.2U	0.5U	0.5U	0.5U	0.5U	0.25U

PRASA-1

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
105	0.2U	0.5U	0.5U	0.5U	0.5U	0.25U

MW-3R

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
92-97	0.2U	**1.2**	**0.68**	**0.85**	0.5U	**0.035J**

MW-3RS

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
56-66	0.21U	**15**	**2.2**	**2**	0.5U	**0.023J**

MW-5

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
17-27	0.21U	**0.25J**	**0.25J**	**0.25J**	0.5U	0.5U

MW-6

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
32-42	**0.28**	**1.4**	**1.9**	**0.95**	0.5U	**0.024J**

TCP

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
58-65	**0.18J**	0.5U	0.5U	0.5U	0.5U	0.25U

MPW-9R

Port	Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
1	104-108	**5J-**	0.5U	0.5U	0.5U	**14J+**	**0.22J**
2	124-127	**7.9**	0.5U	0.5U	**0.12J+**	**22J+**	0.5U
3	134-140	**9.3**	0.5U	**0.12J**	**0.19J+**	**25**	**0.11J**
4	164.5-168.5	**5.8**	0.5U	0.5U	**0.22J+**	**19J+**	**0.25J**

MW-18R

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
120-130	**2.5J**	0.5U	0.5U	0.5U	0.5U	**0.016J**

MW-21R

Depth (ft bgs)	1,4-Dioxane	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
120-130	**0.53**	0.5U	0.5U	0.5U	0.5U	0.25U

POZO 5A
Club de Leones Well
USGS-OW1
MW-16
PRASA-1
Ana Maria Well
MW-1
Pozo Escuela
MW-2
MW-3RS
MW-3R
MW-15
MW-5
MW-4R
MW-4
MW-6
MW-7
TCP
MW-19R
MW-11
MPW-9R
MW-12
MW-18R
MW-10
MW-21R
N
0
Feet
1,600

Public Supply Wells
Confirmed Source Area
Former Potential Source Area
PCE plume contour (5 µg/L)
1,1-DCE plume contour (7 µg/L)

Groundwater Sample Results
Detection
Exceedance
Non-Detect
Not Sampled

Acronyms:
PCE - tetrachloroethene
DCE - dichloroethene
TCE - trichloroethene
VC - vinyl chloride
NR - no result

µg/L - micrograms per liter
ft bgs - feet below ground surface
GW - groundwater
DUP - duplicate sample
J+ - estimated value, bias high
J- - estimated value, bias low

U - not detected; value shown is detection limit
Bolded text indicates a detection below screening criteria.
Bolded and yellow highlight indicates a detection at or above screening criteria.
Plume lines are dashed where inferred.

Figure 4-5b
Site-Related Monitoring Well Sampling Results - Round 2
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

CDM Smith

South A

North A'

PRIDCO East

Cabo Rojo Professional Dry Cleaners

Extasy Q Prints (projected)

MW-10 MW-21R T-1B T-1C T-2C T-2D MW-18R MPW-9R MW-19R MW-7 MW-4 MW-4R MW-15 MW-2 Pozo Escuela MW-3R (projected) MW-3RS (projected) MW-1 Ana Maria USGS-OW1 (projected) MW-16 PRASA-1 (projected)

Elevation (feet above mean sea level)

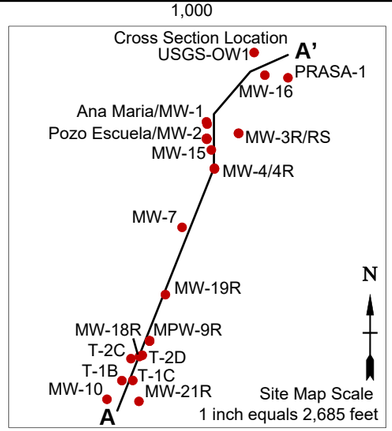
Distance Along Baseline (ft)

Inferred high angle normal fault fracture illustrating subsidence of hanging wall block

Groundwater Flow Direction

LEGEND:

Cross Section Location



- Alluvium
- Overburden
- Saprolite
- Weathered / Highly Fractured Bedrock
- Bedrock
- ? Contact is inferred

- PVC Casing
- Screened Interval
- Open Borehole
- Borehole Blockage
- Sample Interval

- Multiport Well Casing
- Sampling Port

MW-3R and MW-3RS analytical data are not displayed due to their projection onto the section.

Analytical Results
Tetrachloroethene (PCE)
1,1-Dichloroethene (1,1-DCE)
All results in micrograms per liter
U - not detected, detection limit is value to left
J - estimated concentration
+ - high bias

- Water Table (5/2017)
- PCE groundwater plume contour (dashed where inferred) (µg/L)
- 1,1-DCE groundwater plume contour (dashed where inferred) (µg/L)

Horizontal Scale (feet): 0 – 525

Vertical Exaggeration: 11.5x

Vertical Scale (feet): 0 – 45

CDM Smith

Figure 4-6
Cross Section A-A'
Selected PCE and 1,1-DCE Groundwater Results
Cabo Rojo Groundwater Contamination Site
Cabo Rojo, Puerto Rico

Report Prepared on August 2023

STANDARD CROSS SECTION: CABO ROJO CABO_ROJO.GPJ STANDARD_ENVIRONMENTAL_PROJECT.GDT 10/2/17 REV.

Diana M. Batlle-Barasorda, Esq.
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September 3, 2018

Mr. Daniel Rodríguez
Remedial Project Manager
U.S. Environmental Protection Agency
Caribbean Environmental Protection Division
City View Plaza II – Suite 7000
#48 Road 165 km 1.2
Guaynabo, Puerto Rico 00968-8069

Vía Email: *rodriguez.daniel@epa.gov*

Re: Cabo Rojo Groundwater Contamination Superfund Site
Cabo Rojo, Puerto Rico

Dear Mr. Rodríguez:

As you are aware, the United States Environmental Protection Agency ("EPA") published on August 2, 2018, a Proposed Cleanup Plan for this site, and on this same date also sent to our client, the Puerto Rico Industrial Development Company ("PRIDCO"), a Notice of Potential Liability for this site under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. §9601, *et seq*. The EPA published notice informed the general public of the availability of this Proposed Cleanup Plan and the administrative record, so as to allow comments to be submitted before the September 3, 2018 public comment period deadline. On August 31, 2018, PRIDCO presented a timely request for an extension of time to submit comments to the proposed Cleanup Plan and the administrative record. Since no answer to said request has been received, we hereby submit some comments for EPA's review. Nevertheless, PRIDCO insists on its extension request in order to have an adequate opportunity to further consider the Notice and amend or supplement its comments having had such adequate opportunity.

The EPA through its Proposed Cleanup Plan identifies that the Cabo Rojo Groundwater Contamination Superfund Site contains two distinct groundwater areas where the contamination with tetrachloroethene ("PCE"), trichloroethene ("TCE"), cis-1,2-DCE, 1,1-DCE, and vinyl chloride was detected to exceed the maximum contaminant levels. See Figure 3 of the Cleanup Plan. The first groundwater contamination area was labeled as Plume 1, which is to the north near the Ana María groundwater well, and it was determined that the contamination source areas are from the Cabo Rojo Professional Dry Cleaners ("CRPDC") and the Extasy Q Prints ("EQP")

location sites. On the other hand, Plume 2 is located to the south of this Plume 1, and the EPA has determined that the source area is likely the PRIDCO East site.

Since PRIDCO has been determined as the Potentially Responsible Party ("PRP") for only the Plume 2 contamination, we hereby focus our comments exclusively on the results, analysis and conclusions related to the Plume 2 contamination, its extent and the determination that its potential source area is the PRIDCO East property.

A) PRIDCO is not an Owner, but holds indicia of ownership to protects the security interest

PRIDCO was established as a public corporation and an instrumentality of the Puerto Rico government for the purpose of promoting the development of Puerto Rico's economy by stimulating the formation of new local firms and encouraging firms in the United States and foreign countries to establish and expand operations in Puerto Rico. To accomplish its mission, PRIDCO maintains a continuing infrastructure development program, including facilities for lease or sale to qualified private industrial and commercial investors, and the construction of industrial and commercial facilities for lease. In addition, PRIDCO disburses legislative appropriations in accordance with various special incentives programs to assist manufacturers in offsetting allowable startup costs. The basic purpose underlying PRIDCO's supporting role to Puerto Rico's economic development program is the creation of jobs and the consequent improvement of living standards in Puerto Rico. In order to conduct its legislative-created authority, PRIDCO has the power, among other things, to acquire, own, sell, and lease property, all for the purpose of assisting and enhancing Puerto Rico's economy.

PRIDCO does not operate any facility. It owns the land and/or buildings to be used by commercial and industrial entities for economic development purposes. That is the case for the PRIDCO East site located in Cabo Rojo. PRIDCO holds title primarily to secure the money it has advanced to purchase and develop the facilities it leases to its industrial tenants; to protect its interest in advancing industrial development. By purchasing the property and leasing it to several manufacturing operators, said operators would benefit from low cost lease and different incentives that could be passed along through PRIDCO. PRIDCO collects the rent proceeds from the operators or tenants to secure the repayment of principal and interest on the bonds used for the property acquisition. Thus, PRIDCO has never participated in the operation of the business of its tenants at the PRIDCO East site.

It is important to note that under the CERCLA "ownership", it **does not include** a person that, without participating in the management of the facility, merely holds **indicia of ownership** primarily to protect the security interest of the person in the facility. 42 U.S.C. §9601(20)(A)

B) PRIDCO East property is not the source of the Plume 2 contamination

Attached with this letter, we are including PRIDCO's environmental consultant, Caribe Environmental Services, Inc. ("CES"), evaluation and comments on the Proposed Cleanup Plan, the Remedial Investigation and the Feasibility Study that comprises EPA's evaluation of the

contamination in the Cabo Rojo Groundwater Superfund Site, and the likely analysis and conclusions that lead to the EPA determination that PRIDCO is a PRP for the Plume 2 found in the site.

The data included in the Remedial Investigation (RI) report related to the groundwater contamination in Plume 2, clearly suggest that the encountered contamination was originally discharged in the soil, and would then leach in the subsurface reaching the groundwater by runoff rainwater, allowing the contaminant migration to occur through the underlying bedrock fractures existing in the property. The RI specifically states in its Page ES-9, that: "In the saprolite and highly fractured bedrock, dilution and dispersion are expected to actively reduce concentrations moving downgradient." Thus, it concluded that the concentration reductions in Plume 2, were "likely dominated by dilution and dispersion."

Therefore, based on such scientific description of the groundwater environment in Plume 2, the data results should then reflect that the concentrations found at PRIDCO East site should be the highest for 1,1-DCE, and should continue to decrease as it moves outside and downgradient from the site. Interestingly, the results collected by the EPA do not show that trend. Immediately downgradient from the PRIDCO East site is well MW-18R, which is immediately down-gradient from the PRIDCO site buildings. Down -gradient of this well are wells MPW-9R and then MW-19R (See RI Table 4-8, and Proposed Cleanup Plan Table 1). The Remedial Investigation concluded that the concentration trend is a reduction of the contamination as it moves downgradient. If this is the case, then the concentration results should be the highest at PRIDCO site and at MW-18 which is closest to the PRIDCO site, and should decrease as it moves to MPW-9R and then to MW-19R. Nonetheless, the results depicted in the RI, do not purport to that trend.

On the contrary, it shows that the concentration increased significantly as it moves downgradient, showing the highest concentrations at MW-19R. Based on EPA's own conclusion that concentration should be reducing, then a simple analysis can be achieved, and it is that the real source of the contamination for the Plume 2 should probably be found closer to the MW-19R as this is the area with the highest concentration of the 1,1-DCE, as seen in the Round 2 and Post-María results. Therefore, even though contamination has been found at MW-18R immediately downgradient of PRIDCO East site, the results have shown that the contamination shows a very low concentration (0.57 µg/L). Therefore, after the effects of dilution and dispersion of the groundwater at the PRIDCO site, it is scientifically impossible for PRIDCO to be the source of the higher concentrations downgradient at the Plume 2, and around MW-19R. As such, the source for the Plume 2 shall be investigated further, as it should be in the area near MW-19R.

We believe that these comments demonstrate the need for additional analysis and investigation related to Plume 2, that should be pursued the EPA before issuing the Record of Decision.

Sincerely,

Diana Batlle

Carlos W. López Freytes
CWL Legal Services, PSC

MEMORANDUM

Prepared by: **Raúl Colón, P.E., P.H.**
Caribe Environmental Services

Subject: **Site Visit Report**
Evaluation of RI/FS Reports
Cabo Rojo Groundwater Contamination Superfund Site
Cabo Rojo, Puerto Rico
EPA Facility ID No. PRN000206319
CES Project No. 12-0021

Date: October 5, 2018

On August 31, 2018, Eng. Raúl Colón, of Caribe Environmental Services (CES) accompanied by Mrs. Karen Fornes, of the Puerto Rico Industrial Development Company (PRIDCO), conducted a visual site inspection to investigate the potential location of chlorinated solvents source areas down-gradient of the PRIDCO East Park. During this site visit we obtained information that in the past, three mechanical shops operated at the lot either adjacent or up-gradient of an abandoned gasoline station located along the PR-103 Road. For reference purposes, well MW-19R, installed by the EPA, was observed located in the sidewalk to the west of this gasoline station. The information provided by neighbors, at that time, indicated that the names of the three shops were Maguiche, Rebelde and Nestor López and that those shops operated at this area for many years. Knowing that these types of facilities typically use and manage hazardous substance and hazardous wastes, including chlorinated solvents, we recommended that further evaluation of the areas where these old mechanical shops were operated should be conducted.

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MEMORANDUM

As requested by PRIDCO, Eng. Colón conducted a follow-up site visit on October 3, 2018 to further investigate the information previously provided for the mechanical shops. Mrs. Fornes accompanied Eng. Colón during the site visit. At the time of the site visit we contacted Mr. Miguel Martínez who is the Publics Work Director of the Cabo Rojo Municipality. The objective of contacting Mr. Martinez was to obtain information regarding possible Municipality residents that might have historical knowledge of the mechanical shop's operations at the studied area. Mr. Martínez provided the following references for interview:

- Mrs. Danitza Feliciano, who is the director of the Municipal Patent Office (Tel: 787-851-1025, X-2200 and X-2211). We interviewed Mrs. Feliciano to determine if information about the time the three identified mechanical shops operated at the area of concern could be obtained. Mrs. Feliciano called to the meeting Mrs. María Ceda, who is in charge of the patent's records. Mrs. Ceda has lived in the Cabo Rojo town all her life and indicated that she recalls the mechanical shops operation at the abandoned gasoline station area. She indicated that she will be checking the patents records for any mechanical shop operations at the area of concern and that will provide the data to us. However, at the time that this report was prepared no information from the Municipality Patents Office had been received.

- An elderly mechanic that has worked in Cabo Rojo all his life. He indicated that this person lives near the PRIDCO industrial park but he did not recall his name. We were able to find this mechanic and spoke to him. He indicated that he is retired now but did not provided his name. According to the mechanic, the Manguiche, Rebelde and Nestor Lopez mechanical shops operated at the property which was part of the gasoline station. He indicated that these three shops rented their sites from the gasoline station operator. He confirmed that these shops were in operation from at least the 1960s to the 1990s. He indicated that the shops conducted light and heavy mechanical activities.

- Junior Ramírez who operates a transmissions mechanical shop to the south of the PRIDCO Industrial Park. We interviewed Mr. Ramirez who indicated that he is 65-year-old and has been doing mechanical work in Cabo Rojo for many years. Mr. Ramirez also confirmed that the identified mechanical shops operated at the abandoned gasoline station area for at least the 1960s to the 1990s. He indicated that the owner of the gasoline station was Mr. Perfecto Rodriguez Cabassa who rented the shops to Manguiche, Nestor López and Rebelde. He indicated that he recalls that these shops conducted engine and transmissions mechanical work. He recalls the work was conducted in "Ranchones" and in bare ground. I asked if by that time the mechanical shops in the area had processes for

MEMORANDUM

> the management of hazardous substances and disposal of wastes generated in the shop. He indicated that as far as he recalls, at that time, no controlled processes for the management of these substances existed at any of the mechanical shops that he remembers. This information is consistent with our experience in Puerto Rico which suggest that even today, the housekeeping and the hazardous substances and waste management at these types of facilities are not adequate. It is well known that old mechanical shops typically used and managed large quantities of chemical substances (including chlorinated solvents). Our experience indicates that housekeeping practices as well as hazardous wastes management in these old facilities was not typically adequate.

The results of the October 3 site visit confirms that at least three mechanical shops operated at the area where the abandoned gasoline station is located and down-gradient of the PRIDCO Industrial Park. The approximate location of the identified mechanical shops relative to the EPA MW-19R is presented in ***Figure 1***. As shown in this figure, the reported mechanical shops were located between 30 to 60 meters to the east or southeast of the EPA MW-19R.

The results of the RI indicate that the highest 1,1 DCE concentrations reported by the EPA, downgradient of the PRIDCO park, during the Round 2 and the Post Maria sampling events were detected at MW-19R with concentrations of 34 and 40 µg/L, respectively. These concentrations are higher than those detected in MW-9R, which is located approximately 80 meters down-gradient of the PRIDCO site and orders of magnitude higher than those detected immediately down-gradient of the PRIDCO site in MW-18R.

It is our opinion that the information presented in the RI report, as well as the data obtained for historical uses down-gradient of the PRIDCO site, suggest that the identified mechanical shops appear to be a likely significant source of chlorinated solvents to the Plume 2 area. However, further investigation of the area, where the reported mechanical shops were operated, will be necessary to determine whether or not these mechanical shops are a source of contamination to the Plume 2 area.

MEMORANDUM

FIGURES

LEGEND:

- APPROXIMATE PROPERTY LIMITS INCLUDED IN PHASE I ESA
- (1) PHOTOGRAPH NUMBER AND ORIENTATION
- (1) MAINTENANCE AREA
- (2) JARDINES DE MONTE LLANO DEVELOPMENT
- (3) RECREATION AREA
- (4) PRASA MANHOLE
- (5) POLE MOUNTED TRANSFORMER (NON-PBC LABEL)
- (6) GARBAGE COLLECTION AREA
- (7) PRASA PUMP STATION

SOURCE: GOOGLE AERIAL PHOTOGRAPH DATED JANUARY 9, 2018, AND SITE VISIT CONDUCTED BY CES PERSONNEL ON .

FIGURE NOT TO SCALE

ALL LOCATIONS ARE APPROXIMATE AND ARE ACCOMMODATED TO FIT THIS FIGURE.

CES Caribe Environmental Services

www.caribeenvironmental.com

SITE VISIT REPORT
EVALUATION OF RI/FS REPORTS
CABO ROJO GROUNDWATER CONTAMINATION SITE
EPA FACILITY ID NO. PRN0002-6319

CABO ROJO, PUERTO RICO

APPROXIMATE LOCATION OF REPORTED MECHANICAL SHOPS RELATIVE TO THE EPA MW 19R

PROJECT NO. 12-0021A FIGURE 1

Report Prepared on August 2023

Diana M. Batlle-Barasorda, Esq.
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October 5, 2018

Mr. Daniel Rodríguez
Remedial Project Manager
U.S. Environmental Protection Agency
Caribbean Environmental Protection Division
City View Plaza II – Suite 7000
#48 Road 165 km 1.2
Guaynabo, Puerto Rico 00968-8069

Vía Email: *rodriguez.daniel@epa.gov*

Re: Cabo Rojo Groundwater Contamination Superfund Site
Cabo Rojo, Puerto Rico

Dear Mr. Rodríguez:

As you are aware, the United States Environmental Protection Agency ("EPA") published on August 2, 2018, a Proposed Cleanup Plan for this site, and on this same date also sent to our client, the Puerto Rico Industrial Development Company ("PRIDCO"), a Notice of Potential Liability for this site under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. §9601, *et seq*. The EPA published notice informed the general public of the availability of this Proposed Cleanup Plan and the administrative record, so as to allow comments to be submitted before the September 3, 2018 public comment period deadline. On August 31, 2018, PRIDCO presented a timely request for an extension of time to submit comments to the proposed Cleanup Plan and the administrative record, which was accepted by the EPA, and an extension thus was awarded until today.

The EPA through its Proposed Cleanup Plan identifies that the Cabo Rojo Groundwater Contamination Superfund Site contains two distinct groundwater areas where the contamination with tetrachloroethene ("PCE"), trichloroethene ("TCE"), cis-1,2-DCE, 1,1-DCE, and vinyl chloride was detected to exceed the maximum contaminant levels. See Figure 3 of the Cleanup Plan. The first groundwater contamination area was labeled as Plume 1, which is to the north near the Ana María groundwater well, and it was determined that the contamination source areas are from the Cabo Rojo Professional Dry Cleaners ("CRPDC") and the Extasy Q Prints ("EQP") location sites. On the other hand, Plume 2 is located to the south of this Plume 1, and the EPA has determined that the source area is likely the PRIDCO East site.

Since PRIDCO had not received a notice approving the extension of time, the initial comments were presented on September 3, 2018, where it was sustained that PRIDCO is not an owner under CERCLA, since it only holds indicia ownership to protect its secure interest over the property. Additionally, it was explained that based on the available data, the PRIDCO East site does not seem to be the true source of the contamination found in Plume 2, which was the only Plume the EPA determined that PRIDCO was a Potential Responsible Party ("PRP"). These arguments remain and are reiterated though this letter, however, PRIDCO would like to offer additional comments that will allow the EPA to have a more complete administrative record in this case, and to allow EPA the probability of identifying the real contributors to the potential source of this contamination found in Plume 2.

CERCLA Section 107(a), 42 U.S.C. §9607(a), identifies the following persons or entities as potentially liable parties for the response actions:

(1) the current owner or operator of a facility;
(2) any owner or operator of a facility at the time of disposal of the hazardous substances;
(3) any person who arranged for the disposal or treatment of hazardous substances at the facility; and
(4) any person who accepted the hazardous substance for transport to the facility.

The EPA has established in the Proposed Cleanup Plan, and the Remedial Investigation and Feasibility Study that PRIDCO is a PRP due to their current "ownership" status of the PRIDCO East property. However, this conclusion needs to be qualified, as PRIDCO has argued that the ownership definition under CERCLA, Section 101(20), exempts from liability entities that hold indicia ownership. As this matter has been discussed in our previous letter, we won't reiterate and discuss it in these comments. Nonetheless, it is important to note that within the PRIDCO East site, there is an additional "current owner" of an industrial lot since May 2004, which is Fábrica Muebles La Caborrojeña, Inc. This information was provided on October 2012 to the EPA as part of the Response to the Request for Information issued to PRIDCO, and it is presently part of the administrative record. Therefore, if PRIDCO is deemed a PRP under CERCLA by being an owner within the PRIDCO East site, this other entity should also be designated as a PRP, along with PRIDCO.

The data and discussion included in the Remedial Investigation (RI) report related to the groundwater contamination in Plume 2, clearly suggests that the encountered contamination was originally discharged in the soil and would then leach into the subsurface until reaching the groundwater by runoff rainwater, allowing the contaminant migration to occur through the underlying bedrock fractures existing in the property. Based on this fact, and as discussed in our previous letter, the data in Plume 2 should reflect that the concentrations found closest to the PRIDCO East site should be the highest for 1,1-DCE, which is the contaminant of concern in this site, and then continue to decrease as it moves outside and downgradient from the site. Nevertheless, the EPA results do not show this trend, as the concentration increases significantly as you move further downgradient from the PRIDCO East site. Therefore, the only likely scientific conclusion for this data is that the real source contributing to the contamination for Plume 2 should

probably be found closer to the MW-19R as this is the area with the highest concentration of the 1,1-DCE, as seen in the Round 2 and Post-María results. After the effects of dilution and dispersion existing in the groundwater at the PRIDCO site, as described in the RI, it is scientifically impossible for PRIDCO East site to be the source of the higher concentrations found downgradient at the Plume 2 around MW-19R.

As such, PRICO has performed an initial investigation of possible sources surrounding MW-19R. Attached with this letter, we are including PRIDCO's environmental consultant, Caribe Environmental Services, Inc. ("CES"), additional evaluation and comments related to these investigations. In summary, CES conclusion after conducting site visits on August 31 and October 3, 2018 and interviewing residents of the Cabo Rojo town with historical knowledge of the area, it can be concluded that at least three mechanical shops operated near MW-19R, at the area where an abandoned gasoline station is located, upgradient of the PR-103 and PR-308 Roads intersection and down-gradient of the PRIDCO East Industrial Park. The location of the identified mechanical shops relative to the EPA MW-19R, is approximately 30 to 60 meters to the east or southeast. CES report indicates that the information presented in the RI report, as well as the data obtained for historical uses down-gradient of the PRIDCO site, suggest that the identified mechanical shops appear to be a likely significant source of chlorinated solvents to the Plume 2 concentrations. However, further investigation of the area, where the reported mechanical shops were operated, will be necessary to determine whether or not these mechanical shops are a source of contamination to the Plume 2 area.

This scientific analysis of the data included in the RI can lead, at most, to the conclusion that the PRIDCO East site can only be an extremely small contributor to the existing 1,1-DCE concentrations found in Plume 2. If that were the case, then PRIDCO should not be the only PRP considered for this process, as CERCLA allows the inclusion as a PRP the owner or operators at the time of the disposal. As the EPA knows, PRIDCO is a public corporation and governmental instrumentality established for promoting the economic development in Puerto Rico, by stimulating different entities to establish and expand their operations on the island. To accomplish this mission, PRIDCO maintains an infrastructure development program, which included the construction of facilities for lease or sale to qualified private industrial and commercial investors. Therefore, PRIDCO does not operate any manufacturing or other industrial facility. PRIDCO just holds title to the land were the buildings were constructed to be used and leased to tenants. Hence, PRIDCO does not handle and does not generate any hazardous substances, as it is only a passive landowner which leases the properties for economic development purposes.

Based on this fact, the EPA should be encouraged, not only to investigate other potential sources outside of the PRIDCO site, but also to consider including PRIDCO's tenants as the PRPs responsible for any of the contamination alleged that the PRIDCO East site may have contributed. These tenants are then the entities responsible for any of the soil contamination with 1,1 DCE found and any other chlorinated solvent found at the site in the April-May 2013 sampling events, or even that may be found in the future. Thus, these soil and groundwater contamination findings in Plume 2 with 1,1 DCE are then the responsibility of these tenants, which have been summarized in Table 4 of PRIDCO's response from October 2012 to the EPA Request for Information.

This response in no way represents an acknowledgement of liability for costs related to response activities or other costs incurred or to be incurred at the Site, with any such liability expressly denied. Moreover, PRIDCO reserves the right to contest any allegation that it is in any way responsible for the site, and, in addition, this response in no way waives any rights to which PRIDCO may be entitled under law. PRIDCO reserves the right to supplement its response if relevant information not known or not available to PRIDCO as of the date of this submission should later become known or available.

We believe that these comments demonstrate the need for additional analysis and investigation related to Plume 2, that should be pursued by the EPA before issuing the Record of Decision.

Sincerely,

s/
Diana Batlle

Carlos W. López Freytes
CWL Legal Services, PSC

APPENDIX IX
Responsiveness Summary

PUBLIC COMMENTS PREPARED IN SUPPORT OF THE RESPONSIVENESS SUMMARY FOR THE RECORD OF DECISION CABO ROJO GROUNDWATER CONTAMINATION SITE CABO ROJO, PUERTO RICO

INTRODUCTION

This Responsiveness Summary provides a summary of comments and concerns received by the U.S. Environmental Protection Agency (EPA) during the public comment period related to the Cabo Rojo Groundwater Contamination Site (Site) Proposed Plan, and it provides EPA's responses to those comments and concerns. All comments summarized in this document have been considered in EPA's final decision in the selection of the remedy.

SUMMARY OF COMMUNITY RELATIONS ACTIVITIES

The Remedial Investigation (RI), Feasibility Study (FS), Human Health Risk Assessment (HHRA), Screening Level Ecological Risk Assessment (SLERA) and the Proposed Plan for the Site were released to the public for comments on August 2, 2018. These documents were made available to the public at information repositories maintained at the Blanca E. Colberg public library in Cabo Rojo, the EPA Region 2 Office in Guaynabo, Puerto Rico, the Puerto Rico Environmental Quality Board (PREQB), and the EPA Region 2 Office in New York, New York. Documents were also made available electronically on the EPA webpage for the Cabo Rojo Site https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0206319. The notice of availability for the above-referenced documents was published in the Primera Hora newspaper on August 2, 2018. The 30-day public comment period was to run from August 2, 2018 to September 3, 2018.

On August 9, 2018, EPA held a public meeting at the Blanca E. Colberg public library in Cabo Rojo to inform public officials and citizens about the Superfund process, to present the Proposed Plan for the Site, including the preferred remedial alternative, and to respond to questions and comments from attendees. On August 31, 2018, the Puerto Rico Industrial Development Company (PRIDCO), requested an extension of time to submit comments on the Proposed Plan and administrative record for the Site. In response to the request, EPA extended the public comment period until October 5, 2018.

Responses to the questions and comments received at the public meeting and in writing during the public comment period are included in the Responsiveness Summary below. Based on comments received during the public comment period, the public generally supports the selected remedy.

SUMMARY OF COMMENTS AND RESPONSES

Comments were received at the public meeting and in writing. The transcript from the public meeting and the written comments submitted during the public comment period can be found in Appendix VIII. A summary of the comments provided at the public meeting and in writing, as well as EPA's responses to them, are provided below.

Comments from the Public Meeting held on August 9, 2018

Comment 1: How can someone submit a comment on the Proposed Plan?

EPA response to comment 1: EPA presented the Proposed Plan at the public meeting and made all documents available in the information repositories and online. Copies of the Proposed Plan were provided at the public meeting. At the public meeting, EPA advised that comments could be sent to EPA via e-mail or by regular mail. The e-mail address and regular mail address were provided in the Proposed Plan. EPA also advised that EPA could be contacted by telephone at the phone number provided in the Proposed Plan. The public was encouraged to review the documents and raise any concerns within the public comment period.

Comment 2: What would be the impact of the construction and implementation of the preferred alternative to the community? Would the preferred alternative be harmful to the public?

EPA response to comment 2: Construction and implementation of EPA's preferred alternative is expected to have minor impact to the community. Vehicle and pedestrian traffic could be affected temporarily in some areas and there will be some impacts to the businesses in the two source areas during construction activities. There would be no harmful releases of contaminants to the air. The preferred remedy will comply with all commonwealth and federal air emission requirements. Measures would be taken to protect public health and safety during construction and operation of the treatment systems.

Comment 3: What measures are being taken to protect residents near the groundwater plumes from exposure?

EPA response to comment 3: There are no unacceptable risks from current exposure to the contamination plumes. The public supply well that had detections near the cleanup standard or maximum contaminant level (MCL), the Ana Maria Well, was disconnected from the system and the wells currently being used for potable water are not impacted by the contaminant plumes. The active public supply wells, which never had detections above MCLs, are being monitored by Puerto Rico Aqueduct and Sewer Authority (PRASA) in compliance with the Department of Health. In addition, none of the residences that were included in the vapor intrusion investigations had detections of contaminants at concentrations that pose a risk to human health. Two commercial properties in the Plume 1 source area have higher levels of soil vapor contaminants. Detections at these properties were evaluated against commercial property vapor criteria and no unacceptable risks to workers were found. If the use of the source area properties remains unchanged and the contaminated groundwater is not used as a source of potable water, the contamination at the Site should not pose a risk to human health. The contaminated groundwater presents a potential future risk of exposure. Because the concentrations are above EPA's groundwater and soil cleanup standards or criteria, EPA must act to remediate the impacted media.

Comment 4: In the plume that EPA identified, EPA was very specific regarding the areas where elevated levels were found. So, not all people in the area are at risk. Rather is it where EPA determined that the contamination is present that EPA will act?

EPA response to comment 4: Correct, EPA has identified areas of soil and groundwater contamination that are being addressed through the cleanup called for in the Record of Decision (ROD). As indicated in the response to comment 3 above, there are no unacceptable risks to the community from current exposure to contaminants in drinking water from supply wells or through current exposure to contaminants in vapor. EPA is acting based on contaminant concentrations that are above EPA's soil and groundwater criteria based on potential future exposure.

Comment 5: What environmental restrictions or controls are there on the operating businesses in source areas to prevent contamination from happening again?

EPA response to comment 5: There are environmental laws and regulations that address how businesses and facilities must manage the chemicals and materials they use and the wastes they produce. Regulations exist to prevent mismanagement of waste products and it is the responsibility of the business or facility operator to follow them. Of the two facilities identified as contributing to the groundwater contamination in the northern area of the Site (Plume 1), only Extasy Q Prints (EQP) is currently active. The other business, Cabo Rojo Professional Dry Cleaners (CRPDC), has not been operating for a number of years. As noted in the response to Comment 6 below, EPA discussed disposal practices with EQP during EPA Site reconnaissance activities between November 29 and December 7, 2006. Since EPA started sampling at EQP, contamination in groundwater has not increased. The PRIDCO Industrial Park (PRIDCO East) has been identified as an historic source of the groundwater contamination in the southern area of the Site (plume 2). No active sources of contamination were identified at PRIDCO East.

Comment 6: Why didn't EPA or another Agency inform EQP of releases, practices, or products that were causing the contamination?

EPA response to comment 6: During the Site Reconnaissance activities performed between November 29 and December 7, 2006**,** EPA learned that EQP used chemicals containing volatile organic compounds (VOCs) and wastewater from the use of those chemicals was being disposed directly to bare soil at the Site. Based on this information, EPA representatives asked EQP to discontinue the disposal of wastewater to soil. In addition, following the soil vapor investigation performed by EPA in 2011, EPA recommended the relocation of the pre-school (Head Start) in a building adjacent to EQP due to nearby elevated vapor intrusion sampling results. EQP was notified of the situation and was required to install vapor extraction fans in the EQP building. Furthermore, during Site listing on the National Priority List (NPL) and later, during the remedial investigation, at least two public availability sessions were held a short distance from the EQP facility at the Blanca E. Colberg public library in Cabo Rojo. EPA representatives were present at the availability sessions to answer questions and address community concerns. Notifications of the public availability sessions were posted, and notices were delivered door-to-door to nearby residences and business, including EQP. EPA also established an information repository at the Blanca E. Colberg public library. The local information repository includes all Site documents and EPA contact information. EPA believes that ample opportunity was provided for EQP to ask questions, request information, and discuss the Site with EPA during the public availability sessions and during multiple Site visits and sampling events at the EQP property.

Comment 7: EPA should resample the EQP facility. The contamination found in the Cabo Rojo area groundwater is not associated with the current practices at the EQP facility.

EPA response to comment 7: EPA does not believe that additional sampling is needed at the EQP facility or in the surrounding area. As part of Pre-Remedial Site Investigations at the Site, EPA representatives conducted Site reconnaissance activities at 68 properties in the Cabo Rojo area, including EQP. A subsequent report (Weston 2007) documented that screens used in the printing process at EQP were cleaned with liquids containing VOCs, including PCE. The report also documented that wash water and cleaners were discharged directly to the ground surface and a drainage swale that flows past the adjacent daycare center to the sewer system. Subsequent soil sampling conducted on the EQP property as part of the RI, indicated the presence of PCE and cis-1,2-DEC at concentrations exceeding soil screening criteria, which are contributing to groundwater contamination in Plume 1. Regardless of current waste disposal practices at the EQP facility, the soil is contaminated. The only other sources of contamination that were identified at the Site are the CRPDC (Plume 1) and PRIDCO East (Plume 2). EPA, with the concurrence of PREQB, has determined that enough information has been collected at the Site to determine the nature and extent of the contamination, identify source areas, and to proceed with the selected remedy for the Site.

Comment 8: Products from other sources could be contaminating the groundwater in the Cabo Rojo area in addition to EQP and Cabo Rojo Dry Cleaners.

EPA response to Comment 8: After conducting Site reconnaissance activities at 68 facilities in the Cabo Rojo area, conducting detailed source investigations at 15 of the 68 facilities, and performing multiple sampling events at the Site during the remedial investigation, EPA did not find a source of contamination hydraulically upgradient from either facility that would indicate there are sources for Plume 1 other than EQP and CRPDC. There is strong evidence that indicates these facilities used, stored, and mishandled VOC-containing products (based on elevated contaminant concentrations in surface soils within the facilities). The sampling results from both facilities further identifies them as the source areas for the VOC contamination in Plume 1.

Comment 9: Would there be an investigation of the Villa Taína treatment plant overflow problem?

EPA response to comment 9: No, the Villa Taina treatment plant is unrelated to the Site in that it is outside the impacted area and did contributed to the plumes. The Villa Taina wastewater treatment plant was closed in early 2011 and a wastewater pumping station was placed at the location of this former wastewater treatment plant.

Comment 10: Are there other sources of contamination? What were the risks for the nearby school and at the former preschool?

EPA Response to comment 10: See response to Comment 5, above. EPA has not found any additional sources of contamination to the plumes, that have not been discussed herein. Levels of chlorinated VOCs detected by PRASA in public supply wells have always been below the levels of Puerto Rico and federal drinking water standards. At no time has the water from public supply wells posed a public health threat to the community that uses water from the Cabo Rojo Urbano public water supply system. The highest concentrations of VOCs that were detected in one of the wells was below EPA drinking water standards. The Ana Maria Well, was closed in 2014.

No unacceptable risks to human health were found for the nearby school, Ines Mendoza High School. The former preschool was relocated in response of EPA's recommendation due to elevated soil vapor detections at EQP, the adjacent source area, after a soil vapor investigation in 2011.

Comment 11: Does the preferred alternative include a remedial action for the PRIDCO groundwater plume (Plume 2).

EPA Response to comment 11: Yes, EPA has selected MNA for Plume 2. Plume 2 presents a risk within the acceptable risk range but it exceeds the point of departure of 1×10^{-6}. Groundwater contaminant concentrations also exceed cleanup standards but are relatively low. As a consequence, EPA expects the plume will naturally attenuate over time. To ensure continued protection of human health and the environment, long-term monitoring of Plume 2 will be conducted to monitor groundwater concentration trends and evaluate natural attenuation of contaminants. Institutional controls will also serve to limit access to contaminated groundwater until groundwater cleanup standards are met.

Comment 12: Does EPA have an educational outreach program for businesses that handle these kinds of chemicals in order to prevent these types of contamination problems from occurring?

EPA Response to comment 12: EPA has an array of information available on its website that provides information about the proper management of materials, products, and wastes generated by various industries. Also, various business associations often provide assistance to businesses in specific industry sectors.

Comment 13: EPA should release more frequent notifications with investigation results and updates to better inform the community.

EPA Response to comment 13: EPA has established a community participation process for this Site. As part of that process, EPA established an information repository at the public library in Cabo Rojo and placed the relevant Site documents there for easy community access. EPA has distributed Fact Sheets, Press Releases and held public meetings during the investigatory process. EPA maintains a Cabo Rojo website and will schedule public information sessions and meetings as necessary during the cleanup.

Comment 14: PRIDCO disagrees with EPA's conclusion that PRIDCO East is a source of VOC contamination for Plume 2. While PRIDCO suggests that additional analysis and investigation should be undertaken before EPA issues a ROD for the Site, PRIDCO agrees with EPA's proposed approach for addressing the Plume 2 contamination. PRIDCO also suggests that there are other sources of contamination for Plume 2.

EPA Response to Comment 14: EPA disagrees that PRIDCO East is not a source of the VOC contamination in Plume 2 for reasons including that the 1,1-dichloroethene (1,1-DCE) contamination observed in groundwater monitoring wells downgradient of the PRIDCO East property has been traced back to the PRIDCO East Property. EPA considered multiple lines of

evidence described below in its determination that PRIDCO East is a source of the Plume 2 groundwater contamination. That evidence includes:

1. Results of the investigations conducted from 2006 through 2012, to identify other potential source areas (PSAs) near public supply wells contaminated with VOCs (CDM Smith, RI Report, April 2018[1]);
2. Results from groundwater samples from monitoring wells installed upgradient and downgradient of the PRIDCO East property.
3. The history of businesses operating at PRIDCO East (CDM Smith, RI Report, April 2018, Section 1.3.5); and
4. The detection of 1,1-DCE in soil, soil gas, and groundwater samples collected at PRIDCO East.

During 2006, EPA and the Region 2 Site Assessment Team (SAT) 2 conducted file searches at multiple divisions within the PREQB and at the offices of the PRIDCO. An internet search was also conducted for listings of PSAs in the Cabo Rojo area. The results were used to develop a complete list of industrial facilities, commercial facilities, service stations, and schools. EPA then conducted on-site reconnaissance activities at 68 facilities within the municipality of Cabo Rojo (See Pre-CERCLIS Screening Report[2] as discussed in the CDM Smith RI Report, Section 1.3.5).

The list of facilities where Site reconnaissance was completed included four facilities near PRIDCO East including one upgradient (south): Reto Warehouse/US Product Corporation; and several downgradient (north): La Caborrojeana, Inc., Edhsan Aluminum Works, and Mechanica Cabassa (Weston 2007, Figure 2). Based on the information collected and the Site reconnaissance, the PRIDCO East facility and 14 other properties, was identified for further investigation. (CDM Smith, RI Report, Section 1.3.5).

From 2007 to 2012, EPA conducted soil, groundwater, and soil vapor testing at PSAs including PRIDCO East. In July 2011, EPA conducted soil gas sampling at 13 facilities and at PRIDCO East. At PRIDCO East, DCE was detected in two soil vapor samples at 23 parts per billion by volume (ppbv) at one location (PIP-07) and 42 ppbv a second location (PIP-13). The samples were collected near two vacant buildings in the northern portion of the PRIDCO East property (SERAS 2012,[3] Figure 5, as discussed in CDM Smith, RI Report Section 1.3.5).

As discussed further below, nothing was found upgradient of PRIDCO East.

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[1] CDM Smith, Final Remedial Investigation Report, Cabo Rojo Groundwater Contamination Site, Remedial Investigation/Feasibility Study, Cabo Rojo, PR, April 10, 2018.

[2] Weston Solutions, Inc., Pre-CERCLIS Screening Report, Cabo Rojo Site Discovery Initiative Cabo Rojo, Puerto Rico. Document Control No. SAT2.2 0113.030.330 (2007) ("Weston 2007").

[3] Scientific, Engineering, Response & Analytical Services (SERAS) Trip Report – Soil Gas Investigation, Cabo Rojo Site, Work Assignment No.: SEARAS-130, Document No. SERAS130-DRT-011312-DRAFT, 2012. ("SERAS 2012").

In October 2012, PRIDCO responded to an EPA Request for Information issued under CERCLA. The information provided in PRIDCO's response indicated the potential for subsurface contamination from several previous tenants of PRIDCO East.

Based on these findings, in 2013, EPA collected additional soil gas, soil, and groundwater samples at the PSAs, including PRIDCO East. (CDM Smith 2018, RI Report Sections 2.1.3 and 4.2.3). 1,1-DCE was detected at 620 micrograms per kilogram (µg/kg) in soil screening sample PE-SB-01C collected from the PRDICO East property at a depth interval of 14 to 16 feet below the ground surface (CDM Smith, RI Report Table 2-2). Groundwater results show the following:

Upgradient of the PRIDCO East Property

- 1,1-DCE was not detected in shallow monitoring well MW-10, which extends to a depth of 45 feet below the ground surface. This well is located at the southwest corner of the PRIDCO East property and is up and side gradient of borings T1-C, T2-B, T2-C, and T2-D where 1, 1-DCE was detected at similar depths in groundwater samples (CDM Smith, RI Report Figures 3-10 and 4-3).
- 1,1-DCE was not detected in deep bedrock well MW-21R located upgradient of deep bedrock wells MW-18R and MW-9R, which are located north (downgradient) of the PRIDCO East property (CDM Smith, RI Report, Figures 3-12, 4-5b and 4-6). Upgradient well MW-21R is screened at about the same elevation as the screened interval of MW-18R, where 1,1-DCE was detected in the sample collected in February 2018 (post Hurricane Maria sampling), and between the two shallow ports (Port 1 and Port 2) in multiport well MW-9R where 1,1-DCE was also detected (CDM Smith 2018, RI Report Table 4-8 and Figure 4-6).

On the PRIDCO East Property

- 1,1-DCE was detected in groundwater screening samples collected in boring T1-C, one of six borings on transect T1 which extend from west to east across the middle of PRIDCO East (CDM Smith, RI Report Figure 4-3). Concentrations of 1,1-DCE results were 0.74 ug/L, and 2.6 ug/L in the three samples collected from boring T-1C over a depth range of 29 to 53 feet below ground surface (CDM Smith, RI Report Figure 4-3).
- 1,1-DCE was detected in groundwater screening samples collected in three borings T2-B, T-2C, and T2-D installed along transect T2 across the north side of PRIDCO East (CDM Smith 2018, RI Report Figure 4-3). Concentrations of 1,1-DCE ranged from 0.19 J ug/L at boring T2-D to 0.58 ug/L at boring T2-C.
- These data, along with the lack of detection of 1,1-DCE in shallow upgradient well MW-10, which is screened over part of the interval sampled in the T1 and T2 borings (24 to 65 feet below ground surface), and upgradient, deep bedrock well MW-21R, indicate that a source of 1,1-DCE is located near or south of boring T1-C (CDM Smith, RI Report, Figure 4-6).

Downgradient of the PRIDCO East Property

- 1,1-DCE was detected in well MW-18R, located 50 feet east-northeast and side gradient of boring T2-D, during post-Hurricane Maria sampling at a concentration of 0.57 µg/L (CDM Smith RI Report, Table 4-8). This well is screened in deep bedrock from 120 to 130 feet below the ground surface.
- 1,1-DCE was detected at concentrations ranging from 14 J µg/L to 30 µg/L in the Round 2 and February 2018 sampling events, in all four ports installed in downgradient bedrock

multiport monitoring well MPW-9R which is located about 250 feet north of transect T2 (CDM Smith RI Report, Figures 4-3 and 4-6, and Table 4-8).

- 1,1-DCE was detected at concentrations ranging from 34 J µg/L to 40 µg/L in the Round 2 and post Hurricane Maria sampling, in well MW-19R which is located about 1,200 feet north of transect T2 (CDM Smith, RI Report, Figure 4-6 and Table 4-8). Well MW-19R is screened from 110 to 120 feet below ground surface, which is at a similar elevation range as Port 2 in well MPW-9R: 124 to 137 feet.

- Groundwater flow is primarily to the north in the PRIDCO East area (CDM Smith 2018, RI Report Figures 3-10 and 3-11, Section 3.2.4). The contamination observed in the bedrock wells MPW-9R and MW-19R is consistent with contaminated groundwater moving north, from the PRIDCO East facility, in the unconsolidated deposits and down into the bedrock and then along fractures in the bedrock towards wells MPW-9R and MW-19R. The flow of groundwater in bedrock, including movement of contaminated groundwater vertically downward, is represented in the Site conceptual model (CDM Smith 2018, RI Report Section 5.6.2 and Figure 5-1).

The groundwater sampling data presented in the RI report show the conditions in Plume 2 at the time of sampling (CDM Smith, RI Report, Figure 4-6). Currently, these data show lower concentrations of 1,1-DCE near PRIDCO East, and higher concentrations of 1,1-DCE downgradient of PRIDCO East in monitoring wells MPW-9R and MW-19R. The current configuration of the plume is consistent with a release that occurred in the past, has moved downgradient, and has been influenced by dilution and dispersion. As discussed in the Site conceptual model, concentrations of 1,1-DCE are lower in the shallow, more permeable units where dilution and dispersion are greater, and are higher in the deeper less permeable fractured bedrock where dilution and dispersion are slower. This is represented conceptually in Figure 5-1 in the RI report (CDM Smith 2018).

Based on the multiple lines of evidence summarized above, EPA has identified PRIDCO East as a source area for the Plume 2 groundwater contamination. This conclusion is based on a thorough investigation of all the PSAs in the area; the presence of 1,1-DCE in soil, soil gas, and groundwater samples collected from PRIDCO East; groundwater flow direction toward the north; the lack of 1,1-DCE in shallow and deep upgradient wells; and the presence of elevated concentrations of 1,1-DCE in downgradient wells.

Comment #15: PRIDCO submitted additional information and suggests there are other sources of contamination responsible for Plume 2. PRIDCO submitted the results of its own reconnaissance activities and interviews with former workers of three historic automobile repair shops that operated during the period from the 1960s through the 1990s. PRIDCO also noted that EPA monitoring well MW-19R, the well that showed the highest level of contamination, is near the former gas station where the auto shops had operated.

EPA Response to Comment #15: EPA has reviewed the additional information provided by PRIDCO. The interviews did not provide information about any waste management practices during the period they were in operation, or evidence that VOC wastes or VOC wastes containing 1,1-DCE were disposed of at these facilities. In addition, 1,1-DCE has not been the solvent of choice

for operations such as degreasing, which typically occur at automobile repair shops. The preferred solvents for degreasing typically are chlorinated ethenes such as tetrachlorethene (PCE) and trichloroethene (TCE). The primary use of 1,1-DCE is in the production of polyvinylidene copolymers used in the manufacture of flexible films for food packaging (SARAN and VELON wraps), as a flame retardant for fibers, as a steel pipe coating, and in adhesive applications (ATSDR 1994). In addition, no petroleum-related VOCs were detected in MW-19R as would be expected if the source was associated with automotive repair.

Based on the data collected by EPA and the multiple lines of evidence discussed above, EPA has identified the PRIDCO East property as a source of the 1,1-DCE contamination in groundwater. EPA does not believe that additional investigation is necessary and that adequate information has been collected to support the selected remedy.

[4] Agency for Toxic Substances and Disease Registry 1994. Toxicological Profile for 1,1-Dichloroethene, May 1994.

GOBIERNO DE PUERTO RICO
DEPARTAMENTO DE RECURSOS NATURALES Y AMBIENTALES

12 de julio de 2023

Annette M. Fernández Rosario, PE
AVA Environmental Consultants
PO Box 361300
San Juan, PR 00936-1300

ASUNTO: **SOLICITUD DE INFORMACIÓN POR AUDITORÍA AMBIENTAL – FASE I**
PR-CPR-000845 Rehabilitación Centro Urbano
Cabo Rojo, Puerto Rico

Estimado ingeniero Fernández:

En relación a su comunicación con fecha del 6 de julio de 2023, relacionada con la solicitud descrita en el asunto. La misma tiene el propósito de solicitar toda información disponible y específica sobre nuestro conocimiento relacionado con la notificación, respuesta y/o investigación de incidentes ambientales que envuelvan el escape y/o el derrame de sustancias químicas peligrosas en dicha localidad.

La Oficina Regional de Mayagüez, ha realizado una búsqueda de los expedientes que obran en nuestros archivos. De la misma se desprende que no obra alguno que contenga una notificación oficial, informe inicial o final sobre las acciones de respuesta a incidentes ambientales, así como de investigaciones previas o en curso que envuelvan el derrame, escape o emisión de sustancias químicas peligrosas o hidrocarburos derivados del petróleo que hayan impactado adversamente en el lugar y/o las áreas adyacentes al predio objeto de esta consulta. Cabe señalar que la información aquí provista está limitada a la documentación oficial disponible al momento de esta consulta, razón por la cual deberá consultar las otras áreas programáticas del Departamento de Recursos Naturales y Ambientales.

De surgir dudas, preguntas o comentarios al respecto, puede comunicarse con esta Oficina Regional al teléfono: (787) 445-8903 o visitar nuestra oficina, cuya dirección física aparece al calce de esta notificación.

Cordialmente,

Harold González Avilés
Director
Oficina de Mayagüez

Appendix D

Transmittal Letter

February 7, 2024

Based on the information provided, we determined the project proposed qualifies for the blanket clearance letter. Nevertheless, if the project is modified this office should be contacted concerning the need for the initiation of consultation under section 7 of Endangered Species Act of 1973.

Reviewer DAMARIS ROMAN RUIZ
Digitally signed by DAMARIS ROMAN RUIZ
Date: 2024.02.08 12:47:59 -04'00'

LOURDES MENA
Digitally signed by LOURDES MENA
Date: 2024.02.08 13:16:32 -04'00'
Adobe Acrobat version: 2023.008.20470

Acting Caribbean ES Field Supervisor

Caribbean Ecological Services Field Office
U.S. Fish and Wildlife Service
P.O. Box 491
Boquerón, Puerto Rico 00622
Email: caribbean@es@fws.gov

RE: USFWS Endangered Species Act Certifications
January 2024

We are submitting the following Self-Certifications for projects under the CDBG-DR Re-Grow PR Urban-Rural Agriculture Program, Small Business Financing Program, and City Revitalization Program. Attached are included the Self-Certifications that certify that the projects are in compliance and are not likely to adversely affect federally-listed species.

The following table includes the projects that are in compliance with the Blanket Clearance Letter for the Endangered Species act of 1973, as amended, and the Fish and Wildlife Coordination Act.

Project Number	Project Name
PR-CRP-000672	Parque La Moca
PR-CRP-000745	Coliseo Angel Mercado
PR-CRP-000845	Rehabilitación de la Infraestructura del Centro Urbano
PR-RGRW-00360	José Valentín Valle
PR-RGRW-01124	Friends of PR Corp
PR-RGRW-01633	Carlos Juan Figueroa Avilés DBA Jardín La Ceiba
PR-RGRW-01973	K'Planell Farms Corp
PR-RGRW-02274	EVAX
PR-RGRW-02380	Finca Calichi/Cafe de Reyes
PR-SBF-00837	HACIENDA EL JIBARITO INC.
PR-SBF-03630	MIW Innovation Inc.
PR-SBF-03793	Comercial Rivera Auto Parts
PR-SBF-04487	MARIO A. MERCADO GALARZA
PR-SBF-05239	Taller Infantil Miramar
PR-SBF-07136	Beautiful Nails & Hair Studio
PR-SBF-07457	Fade Masters
PR-SBF-07685	Plastics Technical Solutions Corp

PR-SBF-08529	LC Illusion Dental Lab
PR-SBF-09491	MANNY AUTO AIR
PR-SBF-09795	SCOOBY PIZZA

For more information, please contact the Permits and Environmental Compliance Division at environmentcdbg@vivienda.pr.gov or at (787)274.2527 ext. 4320.

Sincerely,

Permits and Environmental Compliance Division
Office of Disaster Recovery

Self-Certification

http://www.fws.gov/caribbean/ES/Index.html

Endangered Species Act Certification

The U.S. Fish and Wildlife Service, Caribbean Ecological Services Field Office developed a Blanket Clearance Letter in compliance with Endangered Species Act of 1973, as amended, and the Fish and Wildlife Coordination Act for federally funded projects. The Service determined that projects in compliance with the following criteria are not likely to adversely affect federally listed species. Puerto Rico Department of Housing (PRDOH) certifies that the following project **Rehabilitación de la Infraestructura del Centro Urbano, PR-CRP-000845,** consisting of the reconstruction and rehabilitation of sidewalks, tapings, municipal streets, and cobblestones. Also, rehabilitation or replacement of lighting poles and their luminaries and installation of two emblematic signs, located throughout several squares of traditional urban center of Cabo Rojo, PR 00623, around coordinates 18.087829, -67.148738, complies with:

Check	Project Criteria
☒	1. Street resurfacing.
☒	2. Construction of gutters and sidewalks along existing roads.
☐	3. Reconstruction or emergency repairs of existing buildings, facilities, and homes.
☐	4. Rehabilitation of existing occupied single-family homes, and buildings; provided that equipment storage or staging areas are not located on vacant property harboring a wetland and/or forested vegetation and that the lighting associated to the new facilities is not visible directly or indirectly from a beach.
☐	5. Demolition of dilapidated single-family homes or buildings; provided that the demolition debris is disposed in certified receiving facilities; equipment storage or staging areas are not located on vacant property harboring a wetland and/or forested vegetation.

☐	6. Rebuilding of demolished single-family homes or buildings, provided that the new construction is within the existing footprint of the previous structure and/or within pre- existing grassed or paved areas, and that the lighting associated to the new facilities are not visible directly or indirectly from a beach.
☐	7. Activities within existing Right of Ways (ROWs) of roads, bridges, and highways, when limited to actions that do not involve cutting native vegetation or mayor earth moving; and are not located within, or adjacent to, drainages, wetlands, or aquatic systems. These activities include the installation of potable water and sanitary pipelines.
☐	8. Improvements to existing recreational facilities, including the installation of roofs to existing basketball courts, provided that the lighting associated to the facilities are not visible directly or indirectly from the beach.
☐	9. Construction of electric underground systems in existing towns and communities, provided that the property is not a wetland area and the lighting associated to the facilities are not visible directly or indirectly from the beach.
☐	10. Construction of facilities on vacant properties covered with grasses in urban areas, provided that the lighting associated to the facilities are not visible directly or indirectly from the beach.
☐	11. Construction of houses, buildings or acquiring lands in urban areas covered by grass for relocation of low-income families and/or facilities that have been affected by weather conditions.

Jan. 31, 2024

Ángel G. López-Guzmán
Deputy Director
Permits and Environmental Compliance Division

Date

Office of Disaster Recovery
Address: P.O. Box 21365 San Juan, PR 00928
Telephone and Ext: 787-274-2527 ext. 4320
Email: environmentcdbg@vivienda.pr.gov

Attachment 1

Maps

CONSTRUCTION PHASES TABLE		
PHASE ID	STREETS	LEGEND
PHASE 1	JOSE DE DIEGO ST./ BALDORIOTY ST.	
PHASE 2	HENNA ST./ BETANCES ST.	
PHASE 3	HOSTOS ST./ MARIANO QUIÑONES ST.	
PHASE 4	RUIS RIVERA ST./ JIMENEZ ST.	
PHASE 5	MANUEL F. ROSSY ST./ RUIS BELVIS ST.	
PHASE 6	ANGEL FRANCO ST./ GEN.ANTONIO MACEO ST./ZOLO STGO. ST.	
PHASE 7	LABRA ST./ PUEBLO NUEVO STS./ MAXIMO GOMEZ ST.	
PHASE 8	BARBOSA ST.	
PHASE 9	MUÑOZ RIVERA ST.	
PHASE 10	SALVADOR BRAU ST./ SALVADOR MESTRE ST.	

NOTES:

1. CONSTRUCTION PHASES SHOWN ON THIS PLAN ARE SUGGESTED FOR THE SEQUENCE OF THIS PROJECT FOR ONE CONTRACTOR.
2. IF THE PROJECT IS DIVIDED BY DIFFERENT CONTRACTORS, EACH CONTRACTOR SHALL SUBMIT THE CONSTRUCTION SEQUENCE FOR REVISION AND APPROVAL OF THE OWNER AND PROJECT ENGINEER.
3. MAINTENANCE OF TRAFFIC APPLICATIONS SHALL COMPLY WITH MUTCD 2009 MANUAL.
4. THE CONSTRUCTION PHASES INCLUDED ON THIS TABLE, PROPOSE TO WORK THE STREETS ON EACH PHASES SIMULTANEOUSLY.

N

GENERAL SITE PLAN
SCALE: 1:1,250

5 0 10 20 50 80
SCALE: 1:1,250

7/19/2022 1:35:48 PM

OWNER

MUNICIPIO AUTONOMO DE CABO ROJO
49 CII BETANCES
CABO ROJO, P.R. 00623
Office Telephone: (787)851-1025
email: mcr@caborojopr.net

CONSULTANT

BR&A LLC
3100 Rd. 199 SUITE 203
SAN JUAN, P.R. 00926
Office Telephone:
(787) 707-1717
br@brapr.com

CONSULTANT

SEAL

PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/30/21
2	60% DESIGN DEVELOPMENT	03/31/22
3	90% DESIGN DEVELOPMENT	06/22/22
4	100% DESIGN DEVELOPMENT	08/04/22

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

MOT
CONSTRUCTION
PHASES PLAN

SHEET ID

MOT4

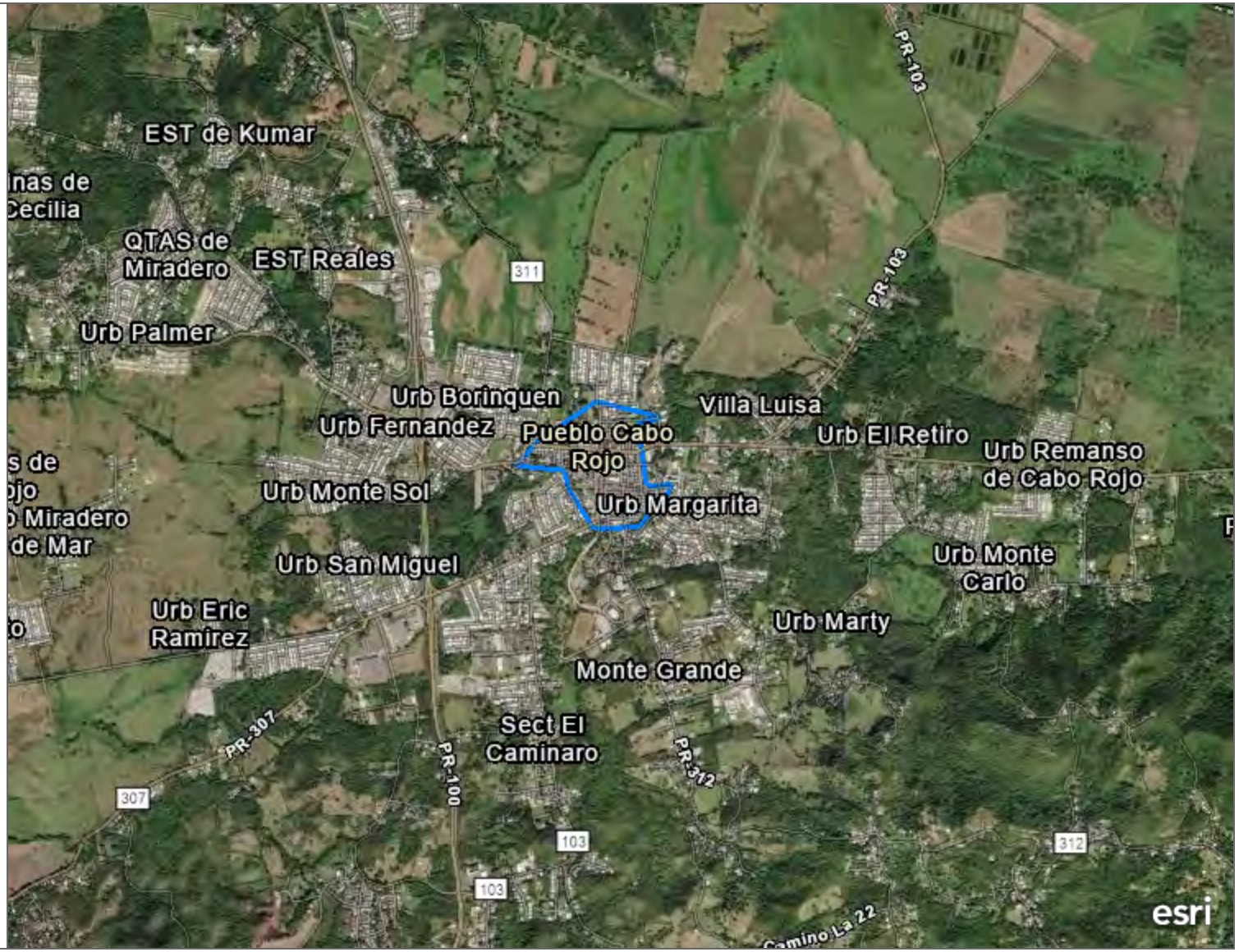
Critical Habitat for Threatened & Endangered Species [USFWS]

Final Polygon Features

Final Linear Features

Proposed Polygon Features

Proposed Linear Features



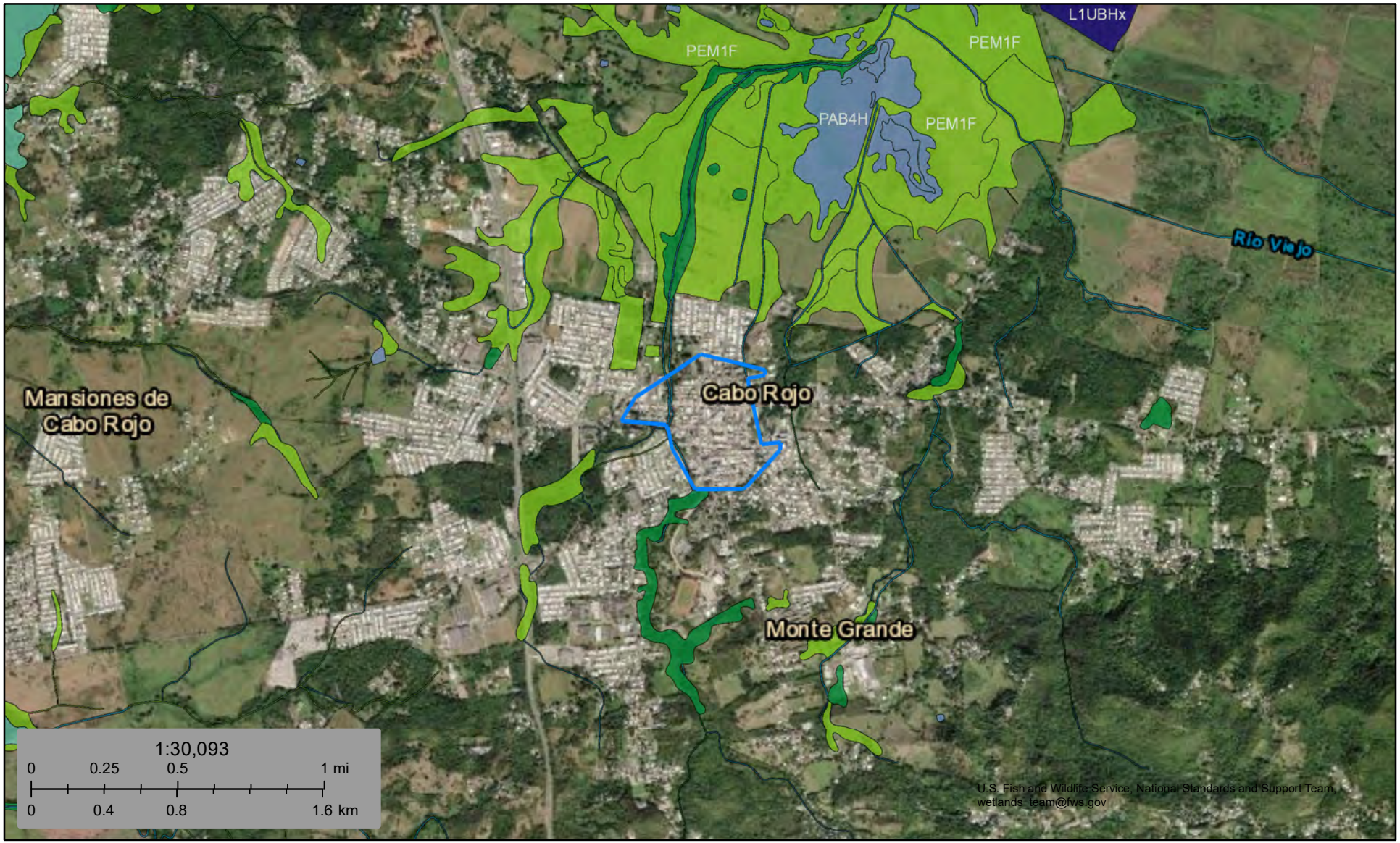
A specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

Maxar | Esri Community Maps Contributors, Esri, HERE, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, NPS, US Census Bureau

U.S. Fish and Wildlife Service

National Wetlands Inventory

PR-CRP-000845



November 29, 2023

Wetlands

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

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Attachment 2

IPaC Report

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Cabo Rojo County, Puerto Rico

Local office

Caribbean Ecological Services Field Office

(787) 834-1600
(787) 851-7440
CARIBBEAN_ES@FWS.GOV

MAILING ADDRESS

Post Office Box 491
Boqueron, PR 00622-0491

PHYSICAL ADDRESS

Office Park I
State Road #2 Km 156.5, Suite 303}
Mayaguez, PR 00680

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

NOT FOR CONSULTATION

2. 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.

The following species are potentially affected by activities in this location:

Reptiles

NAME	STATUS
Puerto Rican Boa Chilabothrus inornatus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6628	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

NOT FOR CONSULTATION

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

NOT FOR CONSULTATION

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.

2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The data in this location indicates there are no migratory birds of conservation concern expected to occur in this area.

There may be migratory birds in your project area, but we don���t have any survey data available to provide further direction. For additional information, please refer to the links above for recommendations to minimize impacts to migratory birds or contact your local FWS office.

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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

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Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

NOT FOR CONSULTATION

Facilities

National Wildlife Refuge lands

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 at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

NOT FOR CONSULTATION

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also

been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Attachment 3

Supporting Documents

U.S. FISH AND WILDLIFE SERVICE
CARIBBEAN ECOLOGICAL SERVICES FIELD OFFICE

Conservation Measures for the Puerto Rican boa (*Chilabothrus inornatus*)

Section 7 (a)(1) of the Endangered Species Act (ESA) charges Federal agencies to aid in the conservation of listed species, and section 7 (a)(2) requires the agencies, through consultation with the U.S. Fish and Wildlife Service (Service), to ensure their activities are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats. Section 7 applies to the management of Federal lands as well as Federal actions that may affect listed species, such as Federal approval of private activities through the issuance of Federal funding, permits, licenses, or other actions. Any person that injures, captures, or kills a Puerto Rico boa is subject to penalties under the ESA. If Federal funds or permits are needed, the funding or permitting agency should initiate Section 7 consultation with the Service. To initiate a consultation under the Section 7 of the ESA, you must submit a project package with the established minimum requirements. These conservation measures should be incorporated into the project plans to minimize possible impacts to the species.

The endangered Puerto Rican (PR) boa (*Chilabothrus inornatus*, formerly *Epicrates inornatus*) is the largest endemic snake species that inhabits Puerto Rico. The PR boa is non-venomous and does not pose any life threatening danger to humans, but some individuals may try to bite if disturbed or during capture or handling. Its body color ranges from tan to dark brown with irregular diffuse marking on the dorsum, but some individuals lack marking and are uniformly dark. Juveniles may have a reddish color with more pronounced markings. In general, as they mature, their body color tends to darken.

Adult PR boa – *Chilabothrus inornatus*
Photo: Puerto Rico by JP Zegarra

Last Revised: November 2020

The Puerto Rican boa was federally listed in 1970. Currently, the species has an island-wide distribution and occurs in a wide variety of habitat types ranging from wet montane to subtropical dry forest, and can be found from mature forest to areas with different degrees of human disturbance like roadsides or houses, especially if near their habitat in rural areas. This boa is considered mostly nocturnal, remaining less active, concealed or basking under the sun during the day.

The Service has developed the following conservation measures with the purpose of assisting others to avoid or minimize adverse effects to the PR boa and its habitat. These recommendations may be incorporated into new project plans and under certain circumstances into existing projects. Depending on the project, additional conservation measures can be implemented besides the ones presented in this document.

Conservation Measures:

1. Inform all project personnel about the potential presence of the PR boa in areas where the proposed work will be conducted. A pre-construction meeting should be conducted to inform all project personnel about the need to avoid harming the species as well as penalties for harassing or harming PR boas. An educational poster or sign with photo or illustration of the species should be displayed at the project site.

2. Prior to any construction activity, including removal of vegetation and earth movements, the boundaries of the project and areas to be excluded and protected should be clearly marked in the project plan and in the field in order to avoid further habitat degradation into forested and conservation areas.

3. Once areas are clearly marked, and prior to the use of heavy machinery and any construction activity (including removal of vegetation and earth movement), a biologist or personnel with experience on this species should survey the areas to be cleared to verify the presence of any PR boa within the work area.

4. The PR boa is considered more active at night. Thus, in order to maximize its detection, the species should be searched at nights prior to habitat disturbance.

5. Once the area has been searched for PR boas, vegetation should first be cleared by hand to the maximum extent possible. Vegetation should be cut about one meter above ground prior to the use of heavy machinery for land clearing. Cutting vegetation by hand will allow boas present on site to move away on their own to adjacent available habitat. Any stone walls or naturally occurring rock piles must be carefully dismantled by hand as these are refuges for the snake. This will allow any boas present to vacate the site without injury.

6. For all boa sightings (dead or alive), record the time and date of the sighting and the specific location where it was found. PR boa data should also include a photo of the animal (dead or alive), site GPS coordinates, the time and date, and comments on how the animal was detected and its behavior.

7. If a PR boa is found within any of the working or construction areas, activities should stop at that area and information recorded (see #6). **Do not capture the boa.** If boas need to be moved out of harm's way, designated personnel shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for safe capture and relocation of the animal (PRDNER phone #s: ((787) 724-5700, (787) 230-5550, (787) 771-1124). If immediate relocation is not an option, project-related activities at this area must stop until the boa moves out of harm's way on its own. Activities at other work sites, where no boas have been found after surveying the area, may continue.

8. If a PR boa is captured by the PRDNER, record the name of the PRDNER staff and information on where the PR boa will be taken. This information should be reported to the Service.

9. Measures should be taken to avoid and minimize PR boa casualties by heavy machinery or motor vehicles being used on site. Any heavy machinery left on site (staging) or near potential PR boa habitat (within 50 meters of potential boa habitat), needs to be thoroughly inspected each morning before work starts to ensure that no boas have sheltered within engine compartments or other areas of the equipment. If PR boas are found within vehicles or equipment, do not capture the animal and let it move on its own or call PRDNER Rangers for safe capture and relocation of the animal (see #7). If not possible, the animal should be left alone until it leaves the vehicle on its own.

10. PR boas may seek shelter in debris piles. Measures should be taken to avoid and minimize boa casualties associated with sheltering in debris piles as a result of project activities. Debris piles should be placed far away from forested areas. Prior to moving, disposing or shredding, debris piles should be carefully inspected for the presence of boas. If debris piles will be left on site, we recommend they be placed in areas that will not be disturbed in the future.

11. If a dead PR boa is found, immediately cease all work in that area and record the information accordingly (see #6). If the PR boa was accidentally? killed as part of the project actions, please include information on what conservation measures had been implemented and what actions that will be taken to avoid further killings. A dead boa report should be sent by email (see contacts below) to the Service within 48 hours of the event.

12. Projects must comply with all state laws and regulations. Please contact the PRDNER for further guidance.

If you have any questions regarding the above conservation measures, please contact the Service:

- Marelisa Rivera, Deputy Field Supervisor
  - Email: marelisa_rivera@fws.gov
  - Office phone (786) 244-0081 or mobile (305) 304-1814
- José Cruz-Burgos, Endangered Species Coordinator
  - Email: jose_cruz-burgos@fws.gov
  - Office phone (786) 244-0081 or mobile (305) 304-1386

Last Revised: November 2020

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Caribbean Ecological Services Field Office
Bayamón | Mayagüez | Maricao | Río Grande | St Croix
P.O. Box 491
Boquerón, Puerto Rico 00622

In Reply Refer To:
FWS/R4/CESFO/BKT/HUD

Mr. Efrain Maldonado
Field Office Director
U.S. Department of Housing and Urban Development
235 Federico Costa Street, Suite 200
San Juan, Puerto Rico 00918

Re: Blanket Clearance Letter for Federally sponsored projects, Housing and Urban Development

Dear Mr. Maldonado:

On January 14, 2013, the U.S. Fish and Wildlife Service (USFWS) in coordination with the U.S. Department of Housing and Urban Development (HUD), signed the Blanket Clearance Letter (BCL) to expedite the consultation process, for federally sponsored projects. On March 20, 2025, the USFWS and the Puerto Rico Department of Housing (PRDOH) acting as the responsible entity designated by HUD decided to review and update the BCL to ensure that new available information regarding the consultation process is included. This letter replaces the January 14, 2013, Blanket Clearance Letter for HUD sponsored projects.

The U.S. Fish and Wildlife Service (USFWS) is one of two lead Federal Agencies responsible for the protection and conservation of Federal Trust Resources, including threatened or endangered species listed under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) (ESA). In the U.S. Caribbean, the USFWS has jurisdiction over terrestrial plants and animals, the Antillean manatee and sea turtles when nesting. The National Marine Fisheries Service has jurisdiction over marine species, except for the manatee. The ESA directs all Federal agencies to participate in conserving these species. Section 7 of the ESA requires Federal agencies to consult with the USFWS to ensure that actions they fund authorize, permit, or otherwise carry out will not jeopardize the continued existence of any listed species or adversely modify designated critical habitat.

The USFWS issued regulations in 1986 detailing the consultation process. As part of this consultation process, the USFWS reviews development projects to assist Federal agencies on the compliance of the ESA. Since HUD typically allocate grant funds for rural and urban development projects, obligations under the ESA, as well as the National Environmental Policy Act (NEPA), require HUD to perform consultation and an environmental impact review prior to the project's

authorization. Primarily, these projects involve repair or reconstruction of existing facilities associated with developed land.

In order to expedite the consultation process, the Caribbean Ecological Services Field Office (CESFO) has developed this BCL to cover for activities and projects that typically result in no adverse effects to federally-listed species under our jurisdiction. The proposed project criteria discussed below are subject to the following conditions:

1. The project is located within an urban or developed area.

    - An urban or developed area is defined as an area that 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 neighborhood 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[1].

2. If the project is located in a rural area, and the project is located within a disturbed area that does not require additional clearing of forested (trees) areas.

3. The project is not located within (or adjacent to) drainages, rivers, streams, wetlands, aquatic systems, or coastal areas.

4. If the project is located in a rural area, and the project is not located immediately adjacent to forested areas (e.g., rock walls and haystack hills (“mogotes”); wet montane forest; lowland wet forest; remnant coastal; mangrove forest; damp and dry limestone karst forests; pastureland with patches of exotic trees[2]).

5. The lighting associated to the facilities is not visible directly or indirectly from the shoreline or beach area.

Proposed projects that **do not** meet the above conditions **Do Not Qualify** for review under the Blanket Clearance Letter developed for compliance with Section 7 of the Endangered Species Act.

[1] This is the definition used by the USFWS in IPaC.
[1] *Ibid.*

Project Criteria:

1. Activities related to the resurfacing existing streets or roads; maintenance of existing upland gabion or reinforced concrete retention walls; construction, reconstruction or repair of gutters and sidewalks along existing roads.

2. Repair, replace, improve, reconstruct and/or rehabilitate facilities in already established public transportation systems (Signs, sidewalks and ramps, bus stops and existing routes).

3. Repair, replace, improve, reconstruct, rehabilitate and/or expanding existing public transportation facilities located in urban or developed areas.

4. Construction of new facilities for public transportation systems (e.g. School bus stops, city buses, trolleybuses, public car stops, Public car terminal) in urban or developed areas.

5. Repair, replace, improve, reconstruct, or rehabilitate existing bridges or rip-rap. (follow FWS rip-rap guidance for design).

6. Reconstruction, or emergency repairs, of existing structures, including but not limited to buildings, facilities and homes.

7. Demolition of dilapidated single-family homes or buildings.

8. Rebuilding of demolished single-family homes or buildings.

9. Retrofitting existing buildings.

10. Construction of residential and/or commercial facilities.

11. Construction, repair, replace, improve, reconstruct, and/or rehabilitate recreational facilities.

12. Addition of concrete pads to the existing footprint of a residential and/or commercial structure, provided that the resulting addition is less than 20% of the size of the existing structure.

13. Improvement or renovations to existing structures (exterior and interior) renovations resulting in an exterior increase greater than 20%.

14. Improvements or renovations to existing structures (exterior and interior renovations) resulting in an exterior increase of less than 20%.

15. Acquisition of residential and/or commercial properties in urban or developed areas for the relocation of families and/or activities.

16. Construction, reconstruction, rehabilitation and/or expansion of cemeteries.

17. Installation/drilling of new water well and associated utility infrastructure, either above ground or underground.

18. Establishment of power facilities, including but not limited to associated aboveground and/or underground infrastructure.

19. Construction of electrical system infrastructure and associated components, including but not limited to associated aboveground and/or underground infrastructure.

20. Construction of land based small electric generating facilities, including those fueled with wind, sun, or biomass, capable of producing no more than 10 MW. *

21. Activities within existing Right of Ways (ROWs) related to water and sanitary infrastructure; communication infrastructure; roads, bridges and highways without the removal of native vegetation and/or major earth movement.

22. Construction of rooftop or urban telecommunications systems and associated components, including but not limited to associated aboveground and/or underground infrastructure.

23. Establishment of temporary debris storage (TDS) facilities.

24. Establishment and/or closure of solid waste management facilities. But not new landfills.

25. Installation of water storage systems (cisterns) and associated infrastructure, either above ground or underground, including but not limited to installations on existing or new concrete pads, or existing or new roofs.

26. Installation of solar panels, battery storage systems and/or associated utility infrastructure, either above ground or underground, on existing or new concrete pads, existing or new roofs, ground or pole mounted.

27. Installation of generators on existing or new concrete slabs, and associated utility infrastructure, either above ground or underground.

28. Repair of existing agricultural structures including but not limited to greenhouses, warehouses, canopies, fences, corrals, and shade structures with less than 20% expansion of footprint.

29. New construction of agricultural structures in established farms including but not limited to greenhouses, warehouses, canopies, fences, corrals, and shade structures with or without underground and/or aboveground infrastructure utility connections.

30. Construction of fences, cattle corrals, concrete slabs.

31. Installation of storage containers on new concrete slab.

32. New construction or work which expands the footprint of an existing structure and occurs entirely on disturbed, regularly maintained, upland property, including the staging of equipment.

*Comply with USFWS wind energy guidelines if more than one wind turbine, consider painting one blade black to help birds see the blades. https://www.fws.gov/media/land-based-wind-energy-guidelines

Determination:

Based on the nature of the projects described above and habitat characteristics described on project criteria, we have determined that the actions and type of projects described above may be conducted within this BCL without adversely affecting federally-listed species under our jurisdiction. Thus, consultation under Section 7 of the Endangered Species Act is not required.

For all projects, HUD and its funded partners (municipalities) are expected to implement Best Management Practices to enhance the conservation of our trust resources (i.e.; listed species, wetlands, aquatic habitats, migratory birds and marine mammals) and avoid impacts from project development to aquatic habitat such as erosion and stream sedimentation. The Service provides the following recommendations that have proven to help achieve this effort.

Water Crossing Structures:

1. Use of bottomless culverts or single span bridges instead of traditional box or RCP culverts or any other water crossing structure that impacts the stream bottom, particularly in streams which support native fish. The use of bottomless culverts or a short span bridge would provide a more stable crossing and would not alter the stream habitat. However, if bottomless structures or bridges are not feasible due to cost or engineering constraints, we recommend the following criteria be used to maintain good habitat in the streams:

    a. The stream should not be widened to fit the bridge since this can lead to sedimentation during low flows and possible bank erosion during high flows. Rather, the bridge should be designed to fit the stream channel at the point of crossing. Culverts should be sized to carry natural bank full flow. Additional flow can be capture by culverts placed at a higher elevation so as not to impact bank full flows.

    b. Bridge abutments, wing walls or any other structures should not intrude into the active stream channel.

    c. All culvert footings must be countersunk into the stream channel at both the invert and outlet ends at a minimum of 10% of the culvert height. This will align the water crossing structure with the slope of the stream.

    d. Waterways must not be blocked as to impede the free movement of water and fish. Materials moved during construction, such as grubbing, earth fills, and earth cut

materials must not be piled where they can fall back into the stream and block the drainage courses.

e. Appropriate erosion and/or sedimentation controls measures are to be undertaken to protect water quality until riverbanks are re-vegetated. It has been our experience that appropriate erosion and/or sedimentation control measures are not implemented properly by project contractors. In order to function properly, silt fences need to be buried 6" (proper depth is marked by a line on the silt fence) and suppo1ted at regular intervals by wood stakes. For that reason we are recommending that the enclosed drawing of proper silt fence installation is included in all final project construction plans.

f. Upon completion of a water crossing construction, any temporary fill, must be removed from the construction area and disposed in a landfill.

For a detailed guide to water crossing structures, the Service developed a detailed guide to water crossing structures for regulatory review by permitting agencies, protect damaged structures, reduce future damages, and prevent or minimize damage to natural resources. The document is titled "Guidance for Repair, Replacement, and Clean-up Projects in Streams and Waterways of Puerto Rico and U.S. Virgin Islands" and is available at:

https://www.fws.gov/media/guidance-repair-replacement-and-clean-structures-streams-and-waterways-puerto-rico-and-us

Limitations:

Actions that do not meet the above project criteria, such as actions requiring placement of fill, disturbance, or modification to land outside of an existing access road or ROW; actions that occur on vacant property harboring a wetland and/or forest vegetation; actions requiring excavation, clearing of native vegetation, or alteration of storm water drainage patterns; or actions that require lighting which can be directly or indirectly seen from a beach, must be individually coordinated through the Caribbean Ecological Services Field Office and will be evaluated on a case by case basis.

The Service reserves the right to revoke or modify this BCL if:

1. New information reveals that the categories of work covered in this BCL may affect listed or designated critical habitat in a manner, or to an extent, not previously considered.
2. The categories of work included in this BCL are subsequently modified to include activities not considered in this review.
3. New species are listed, or designated critical habitat may be affected.
4. Lack of compliance with criteria in this BCL.

To obtain additional information on threatened and endangered species, you may visit our website https://www.fws.gov/office/caribbean-ecological-services where you will also find the Map of the Species by Municipality and the Map of Critical Habitat. These maps provide information on the species/habitat relations within a municipality and could provide the applicants an insight if the proposed action is covered under this BCL or may affect a species, thus requiring individual review

The USFWS has also developed a web based tool called the Information for Planning and Consultation (IPaC). Please visit https://ipac. ecosphere.fws.gov/ and familiarize yourself with the features we offer. We encourage you to begin your project planning process by requesting an Official Species List for your individual project that will include all species that may occur in the vicinity of the action area and includes a map of the action area. The site will also identify designated critical habitat, or other natural resources of concern that may be affected by your proposed project. Best management practices or conservation measures are available at the site for some species, but we expect the site to continue growing in its offering.

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. It is our 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 additional questions regarding this BCL, please do not hesitate to contact us at (786) 244-0081 or via email at caribbean_es@fws.gov.

Sincerely,

LOURDES MENA

Digitally signed by LOURDES MENA
Date: 2025.04.24 09:11:24 -04'00'

Lourdes Mena
Field Supervisor

Appendix E

EXECUTIVE ORDERS 11988, AS AMENDED BY EXECUTIVE ORDER 13690 AND, & 11990 – FLOODPLAIN MANAGEMENT& PROTECTION OF WETLANDS - EIGHT-STEP PROCESS
U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
COMMUNITY DEVELOPMENT BLOCK GRANT – DISASTER RELIEF (CDBG-DR) PROGRAM

FLOODPLAIN MANAGEMENT
5-STEP DECISION-MAKING PROCESS

Project: "Rehabilitación de la Infraestructura del Centro Urbano", Municipality of Cabo Rojo, Puerto Rico

Project No. PR-CRP-000845

Decision Process for Executive Order 11988, as amended by Executive Order 13690 and, Executive Order 11990 as Provided by 24 CFR §55.20.

Step 1: ***Determine whether the action is in a FFRMS floodplain or wetland.***

The purpose of the proposed project, Rehabilitación de la Infraestructura del Centro Urbano, PR-CRP-000845, consists of the revitalization of approximately 6.39 km of streets, sidewalks, lighting, and other infrastructure within the traditional urban center of Cabo Rojo, PR, excluding the area covered by the Ramón E. Betances Main Square project.

The scope of work includes:

- Removal of material and architectural barriers that restrict the mobility of and accessibility to elderly and persons with disabilities.
- Rehabilitation of damaged street surfaces using materials equal or similar to existing. An evaluation of subsoil conditions should be carried out, if applicable.
- Rehabilitation of damaged sidewalk and curb areas, including repair or replacement of existing cobblestones or brick details with equal or similar materials.
- Replacement, repair, or rehabilitation of street light fixtures, poles, and bases. This includes evaluating functionality, replacing damaged poles, installing missing posts, and painting, if necessary.
- Installation of two emblematic signs, one at each end of Calle Pedro Albizu as one enters the urban center.

Proposed construction activities include:

- Milling and demolition of damaged asphalt street surfaces to a depth of 2-4 inches.
- Selective demolition and replacement of damaged sidewalks and curbs, involving excavation up to 6 inches deep.
- Installation of new street lighting pole foundations, requiring excavation up to 3 feet deep and 2 feet wide.
- Installation of wayfinding signage footers, requiring excavation of narrow holes up to 2 feet deep.
- Trenching for new wiring with trenches estimated to be 3 feet deep and 2 feet wide.
- Sidewalk and curb ramp repair involving subsurface excavation up to 6 inches deep.
- Utility structure repairs like manholes requiring excavation up to 4 feet deep and 4 feet wide.
- The plans also propose the removal and excavation of between 1 foot (12 inches) to a maximum of 1.33 feet (16 inches) in the street section (concrete) to rebuild it and maintain levels similar to the existing ones.

The proposed project is located at throughout several squares of traditional urban center of Cabo Rojo, PR 00623, around coordinates 18.087829, -67.148738. The municipal streets included in the project area encompass approximately 6.39 km and include 20 streets within the traditional Cabo Rojo urban core. Municipal streets included in the project are: (1) Muñoz Rivera Street– North to South (2) Manuel F. Rossy Street– East to West (3) 103 Street intersection 308 Street- North to South (4) Pueblo Nuevo Street (Carbonell Street)– East to west (5) Angel Franco Street– South to North (6) Henna Street– West to East (7) José de Diego Street– East to West (8) Baldorioty de Castro Street– West to East (9) Salvador Mestre Street– South to North (10) Hostos Street– East to West (11) Maceo Street– East to West (12) Maximo Gómez Street– South to North (13) Labra Street–East to West (14) Ruíz Belvis Street– West to East (15) Betances Street– West to East (16) Mariano Quiñones Street– East to west (17) Jiménez Street- West to East (18) Ríos Rivera Street– East to West (19) Barbosa Street– South to North (20) Zolio Santiago Corridor.

Along its path, there are portions of the proposed project located within a Federal Flood Risk Management Standard (FFRMS) floodplain and, a wetland. The extent of the FFRMS floodplain was determined using the 0.2% annual chance (500-year floodplain) approach. The proposed activity with dimensions of 72.81 acres is situated in combined zones, 8.65 acres in floodway, 55.99 acres within the FFRMS

floodplain and, 8.17 acres outside the FFRMS floodplain as shown in FEMA's Advisory Baseline Flood Elevations Map, revised 12/11/2018, https://gis-r2-fema.hub.arcgis.com/apps/31dfa15671944086b54b55bfc03344d7/explore. The site is adjacent to a riverine wetland as shown in the NWI Wetland Mapper at https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/. Refer to Attachment A for Location Map, ABFE Map and Wetland Map.

The extent of the project in the floodway includes a series of narrow two-lane streets and associated infrastructure within the traditional urban center of Cabo Rojo. The existing infrastructure in this area includes damaged roads, narrow and/or obstructed sidewalks, curbs and gutters in poor conditions, damaged light poles, and missing or damaged street signs – all of which hinder pedestrian mobility; moreover, the overall infrastructure damages present at the site hinder the pedestrian accessibility of the elderly and persons with handicaps and/or disabilities. The purpose of the proposed project includes the removal of architectural barriers that hinder mobility and improvement of pedestrian and road safety by widening some of the sidewalks, removal of obstructions from and/or reconstruction of handicap and disability accessible ramps, replacement of pavers, and the reconstruction and/or resurfacing of roads along the traditional urban center. Some of the existing ramps that do not or may not comply with ADA/accessible design standards will be demolished and relocated to comply with the regulation. Additionally, sidewalk lighting, ADA/accessible crossings and signage will be incorporated to ensure pedestrian safety, the concrete slabs of water meters (where any applicable reconstruction occurs) will be repaired as part of the reconstruction of some of the sidewalks, and manholes (where any applicable reconstruction occurs) will be adjusted in accordance with the PRASA's standards.

This analysis will consider impacts to the FFRMS floodplain, floodway and, wetland along with concerns for loss of life or property; as applicable.

The PRDOH Permits and Environmental Compliance Division, on a Memorandum dated April 24, 2024, indicated that the project complied with the following exception for activities in the floodway: 24CFR55.12(i): Special projects directed to the removal of material and architectural barriers that restrict the mobility of and accessibility to elderly and persons with disabilities. The Memorandum is included in Attachment B. The required Accessibility Assessment Report is included in Attachment C.

Given the new for rule 55, effective May 23rd, 2024, this project would qualify for a 5-Step process by section 55.14 (e) "HUD's or the recipient's actions under any HUD program involving the repair, rehabilitation, or replacement of existing nonstructural improvements including streets, curbs, and gutters, where any increase of the total impervious surface area of the facility is de minimis. This

provision does not include critical actions, levee systems, chemical storage facilities (including any tanks), wastewater facilities, or sewer lagoons."

Step 2: Identify Potential Direct and Indirect Impacts Associated with Floodplain and Wetland Development.

The project at the proposed site will not negatively impact the floodplain and wetland and will not have a significant impact on the actual runoff water behavior during weather events. The municipality of Cabo Rojo is a member of the National Flood Insurance Program and structures located in the flood zone must comply with the PR flood regulations. Potential adverse impacts from construction would be temporary and mitigated through construction staging plans developed in partnership with the Cabo Rojo Municipality to minimize disturbance throughout the construction period and at the end of the project. The proposed project will be connected to the existing infrastructure systems. On the contrary, the proposed activity will help preserve the present floodplain and wetland functions and values like creating a pleasant urban revitalization, offer adequate and safe community access in accordance to building codes and regulations, preserve water quality, erosion control and flora & fauna habitat in the area employing appropriate design codes and, effective mitigation measures during the construction activities. The proposed improvements will not have an effect on agricultural lands due to the nature of the activity. No recreational, educational, scientific, historic, and cultural values of the floodplain and wetland will be adversely affected by the activity. The People of Puerto Rico and the Municipality of Cabo Rojo are the owners of the proposed project site. No additional cost due to land acquisition will be incurred nor will ownership issues needed to be solved.

Step 3: Mitigate Adverse Impacts

The highest priority of this review is to prevent the loss of life. No loss of life could be generated as part of the proposed actions. On the contrary, the proposed works would not only generate a positive impact to the actual floodplain and wetland in benefit of people's life quality and preservation of life, but also would help to protect the financial investment of the contiguous business that actually serves the community. No increase in population density will occur as a result of the proposed activity. The proposed improvements will not have an effect on agricultural lands.

The design minimize floodplain and wetland impacts and prevented new construction from occurring in the floodplain/wetland considering provisions for draining. The construction will have minimal effects on water resources. Impact to the floodplain/wetland will also be limited due to construction occurring within the previously developed site. A stormwater pollution prevention plan (SWPPP) would be prepared, and its Best Management Practices (BMPs) would be implemented to avoid surface runoff, ponding, and sedimentation of receiving

waterways during construction preserve property, how it's going to preserve natural values, and minimize impacts, and how it's going to restore and preserve the values of the floodplain. It will include a combination of detention, infiltration, evaporation and settling to manage flow and remove pollutants and construction debris to avoid impact the FFRMS floodplain and adjacent wetland. Construction debris will be collated and disposed at a certified dump site or other authorized facility to manage wastes.

Step 4: Reevaluate the Alternatives.

Although the site is in a floodway, FFRMS floodplain, and wetland, the project has been adapted to minimize its impact. No additional cost due to land acquisition will be incurred nor will ownership issues need to be solved.

It is the responsible entity determination that there is no practicable alternative for locating the project outside the flood zone.

The proposed project will:

1. Eliminate architectural barriers to increase the well-being and safety of pedestrians, particularly students and elderly people in compliance with the Americans with Disabilities Act.
2. Have a positive impact on neighboring properties, as well as Cabo Rojo's commercial core.
3. Increase the well-being and safety of community residents and visitors.
4. Provide safer alternatives to low- and moderate-income communities and surrounding the area.
5. Mitigate and minimize impacts on human health, public property, and floodplain/wetland values by using satisfactory design codes considering provisions for draining and best management practices during the construction activities.
6. Improve existing site's conditions, and infrastructure.
7. Help to prevent further deterioration of the site and to improve traffic safety.

If no action is taken, the proposed improvements will not be implemented, and the facilities will not be enhanced. The proposed use is in harmony with the surrounding developments in the area.

Step 5: Implement Proposal with Appropriate Mitigation.

The municipality of Cabo Rojo will assure that this plan, as described above, is executed and necessary language will be included in all agreements with participating parties. The municipality of Cabo Rojo will also take an active role in monitoring the construction process to ensure no unnecessary impacts occur no

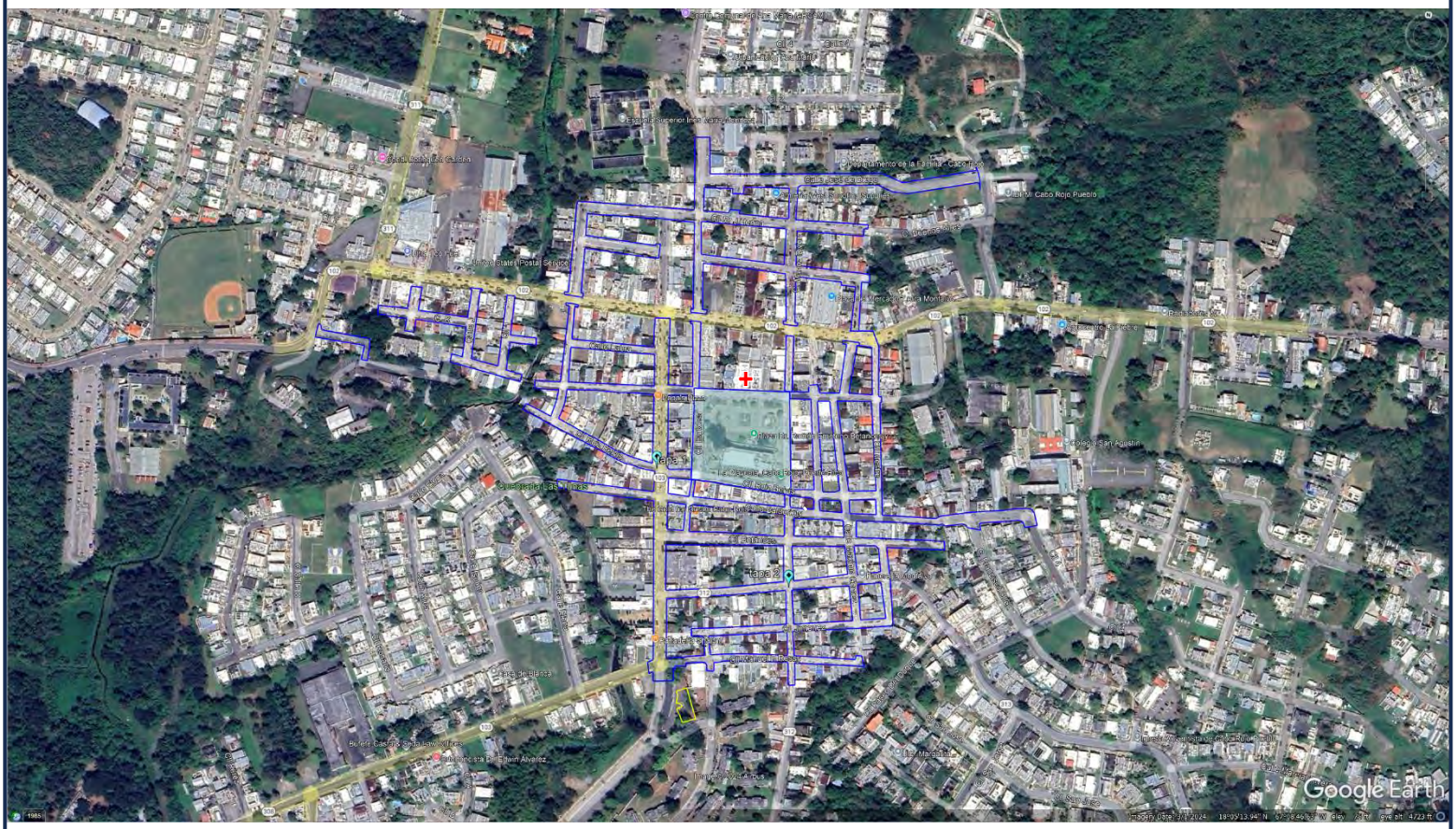
unnecessary risks are taken and ensure that mitigation measures are fully implemented in the area.

Attachment A

Maps

Figure 1: Location Map – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087829, -67.148738



February 22, 2024

Site

Project Point

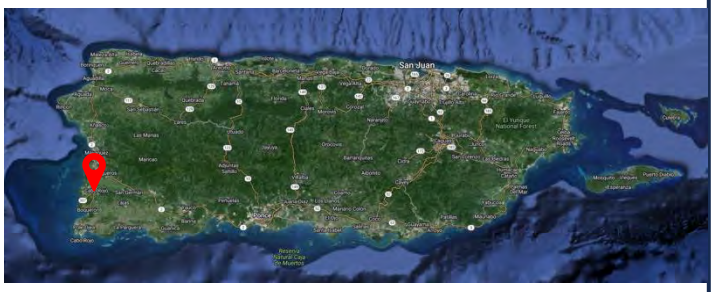
Staging Area

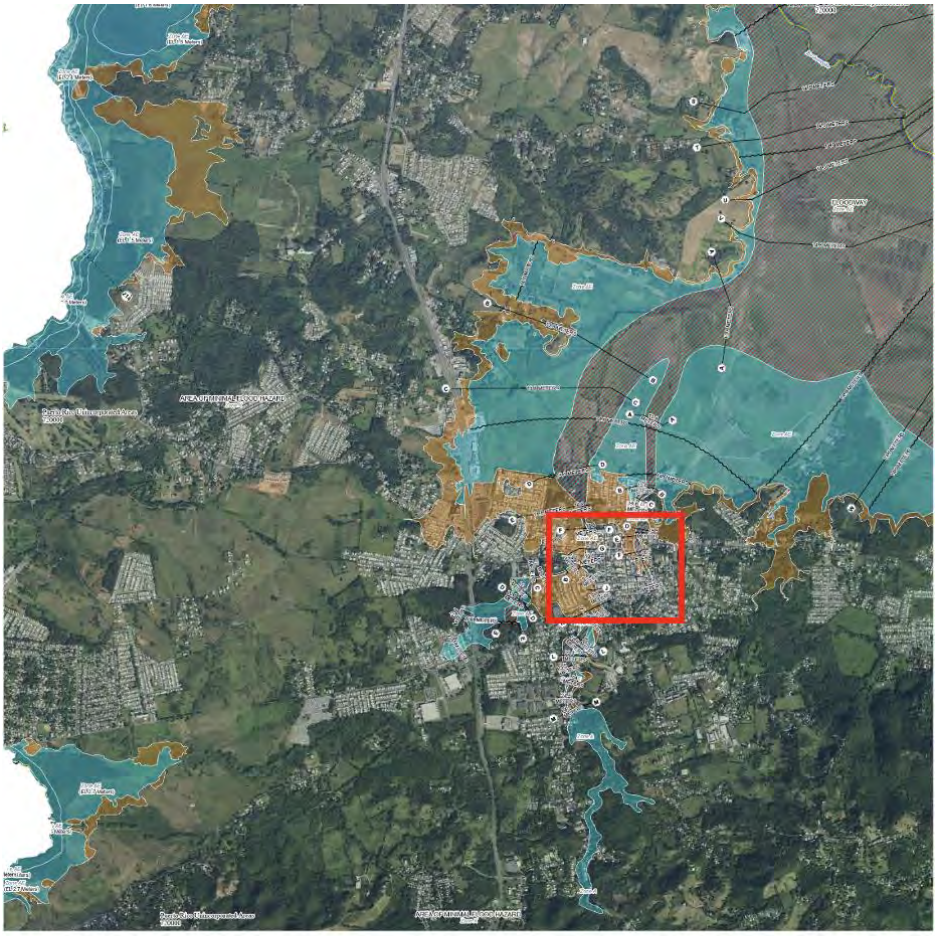
Spatial Reference: World Geodetic System WGS84 standard

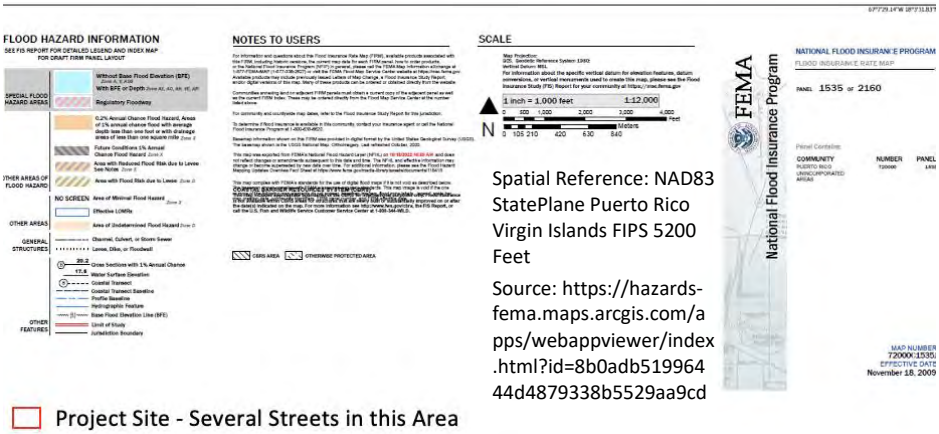
Source: Google Earth

Exhibit 2: FEMA FIRMette – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087829, -67.148738







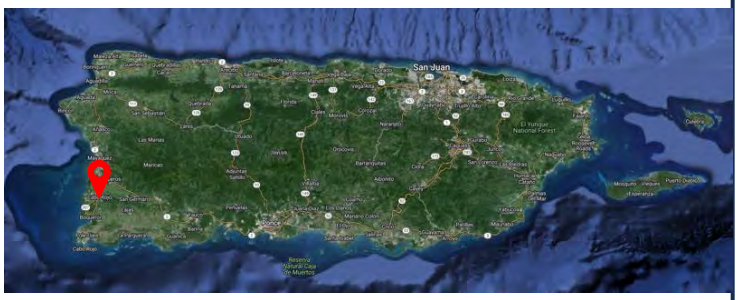
Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

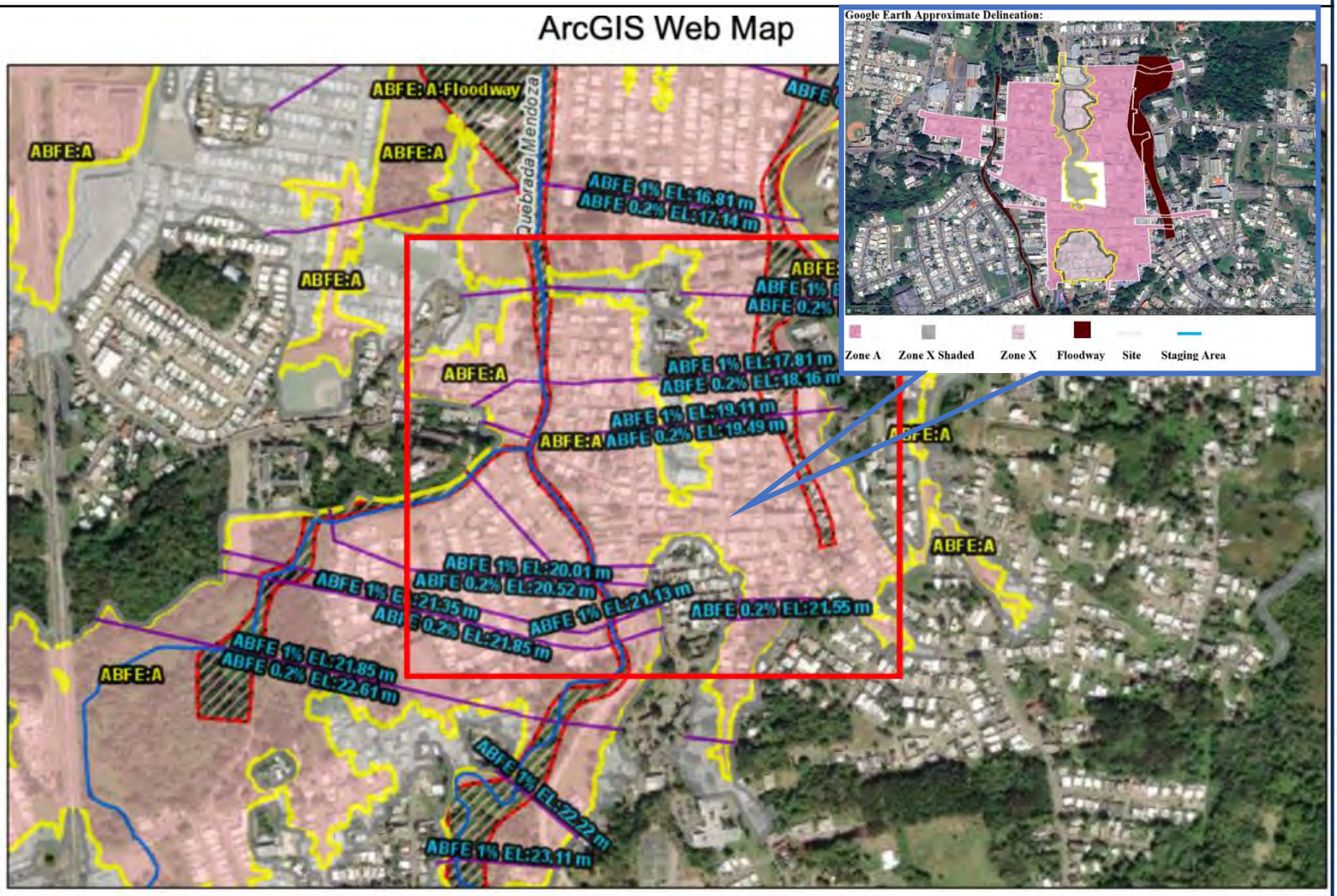
Source: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd

Project Site - Several Streets in this Area

Exhibit 3: ABFEs Map – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087829, -67.148738





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Flood Hazard Area (zoom in to make visible)
A
AO
AE
Coastal A Zone
VE
0.2% Annual Chance Flood Zone
A-Floodway
AE-Floodway
Coastal A Zone and Floodway
Zone/BFE Boundary
Flood Hazard Extent
1% Annual Chance Flood
0.2% Annual Chance Flood
Limit of Moderate Wave Action (LiMWA)
Advisory Base Flood Elevation (zoom in to make visible)

Project Site - Several Streets in this Area

N
1:9,028
0 0.05 0.1 0.2 mi
0 0.1 0.2 0.4 km
FEMA, Maxar

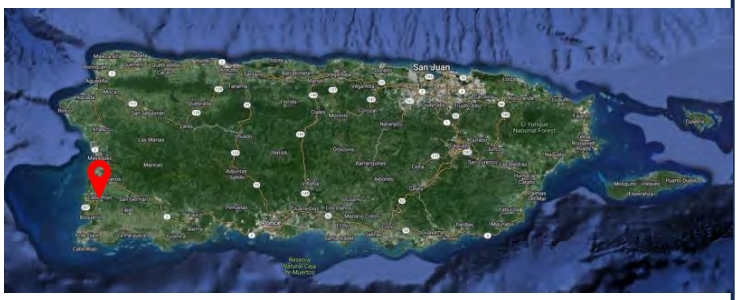
ArcGIS Web AppBuilder
FEMA | Maxar |

Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://gis-r2-fema.hub.arcgis.com/apps/31dfa1567194408 6b54b55bfc03344d7/explore;Google Earth

Exhibit 4: FFRMS – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087829, -67.148738



FFRMS Freeboard Value Approach Report

Created: 10/1/2024

Summary

Based on the user-defined location and non-critical designation, the proposed action is in the FFRMS floodplain. A 2 foot freeboard is applicable per the Freeboard Value Approach. This corresponds to a FFRMS flood elevation of 66.5 FT NAVD88.

The North American Vertical Datum of 1988 (NAVD88) is the datum used on FEMA Digital Flood Insurance Rate Maps (DFIRMs) for Base Flood Elevations (BFEs).

Projects located in the FFRMS floodplain should be designed consistent with the applicable policies and directives of the agency taking or approving the action.

Proposed Action Details

Location centroid (Latitude, Longitude): 18°5'13.2"N 67°8'45.6"W

Service criticality: Non-critical Service Life: Through 2050

Consult with the applicable agency to identify any agency-specific policies, guidance, protocols, or direction on the critical action determination. The services of a professional engineer, architect, or other licensed design professional are recommended for designing critical actions or assets with long intended service life, and for other situations where risk tolerance is low because of unique characteristics of the action.

Considerations of Freeboard approach at this location

• Water Surface Elevation Definition: Water surface elevation (WSEL) means the height, in relation to the North American Vertical Datum of 1988 (NAVD 88) of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas. Potential area where the computed WSEL have discrepancies and may have impacted FFRMS floodplains.

Next Steps

This is the Step 1 of the 8-step decision-making process required in section 2(a) of Executive Order 11988, Floodplain Management (Determine if the proposed action within the FFRMS floodplain). Follow the remainder of the 8-step process outlined in the Implementation Guidelines (2015), page 4, including Step 5 which include minimizing harm and restoring and preserving natural and beneficial values. (Please refer to the Nature Based Solutions section). A licensed design professional should be contacted for the design or engineering of the action. If an action is in the FFRMS floodplain and its location is the only practicable alternative, then you may need the services of a professional engineer, architect, or other licensed design professional to determine how to minimize the impacts of flood and make the action resilient (e.g., elevation, flood-proofing and/or nature-based solutions), especially when dealing with critical actions.

Assistance

To contact the FEMA Regional Floodplain Management & Insurance FFRMS Point of Contact for assistance, e-mail FEMA at FEMA-FFRMS-SUPPORT-REQUEST@fema.dhs.gov

FFRMS Freeboard Value Approach Report Created: 10/1/2024

FFRMS Freeboard Value Approach Report Created: 10/1/2024

Project Location

October 2, 2024

1:12,865

0 0.1 0.2 0.4 mi
0 0.15 0.3 0.6 km

Project Location

FFRMS Floodplain

Staging Area

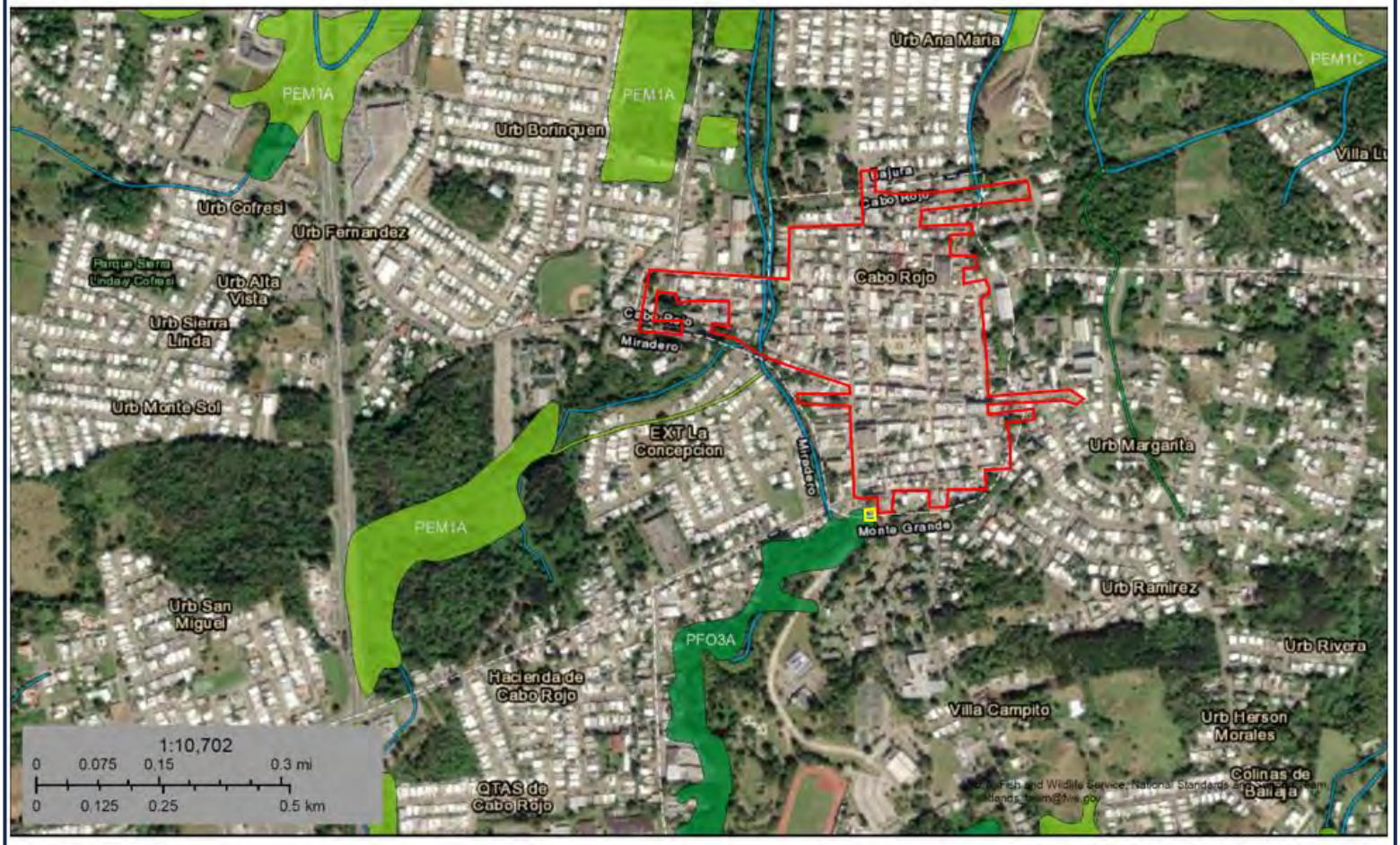
Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://floodstandard.climate.gov/tool

Exhibit 5: Wetlands – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087829, -67.148738

U.S. Fish and Wildlife Service
National Wetlands Inventory



October 18, 2022

Wetlands

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

N

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Spatial Reference: NAD83 StatePlane Puerto Rico Virgin Islands FIPS 5200 Feet

Source: https://fwsprimary.wim.usgs.gov/server/rest/directories/arcgisoutput

Project Site - Several Streets in this Area

Staging Area

Attachment B

PRDOH Permits and Environmental Compliance Division Memorandum

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

MEMORANDUM

DATE: April 24, 2024

SENDER: PRDOH Permits and Environmental Compliance Division

RECEIVER: City Revitalization Program

SUBJECT: Floodway Resolution - Eligible

CASE ID: PR-CRP-000845

PROJECT: Rehabilitación de la Infraestructura del Centro Urbano (Cabo Rojo)

Resolution

Eligible under 55.12(c)(10): Special projects directed to the removal of material and architectural barriers that restrict the mobility of and accessibility to elderly and persons with disabilities.

Project Description

The Municipality of Cabo Rojo is proposing the rehabilitation and reconstruction of infrastructure within the traditional urban center, including work within the following streets: Baldorioty Street, Ruiz Belvis Street, Rius Rivera Street, Labra Street, Ángel Franco Street, Salvador Mestre Street, Antonio Maceo and Zoilo Santiago Streets, Manuel F. Rossy Street, Mariano Quiñones Street, Muñoz Rivera Street, Betances Street, Máximo Gómez Street, Jiménez Street, Barbosa Street, José De Diego Street, De Hostos Street, Henna Street, Pueblo Nuevo Street, Salvador Brau Street, and Pedro Albizu Campos Street. The proposed improvements within the aforementioned locations include: the demolition and reconstruction of existing sidewalks, and construction of new handicap concrete ramps (to comply with ADA/accessible regulatory requirements), reconstruction of concrete curbs and gutters, reconstruction of existing pavers or replacement of cobblestones, reconstruction of curb cut driveways, reconstruction of municipal streets (removal and reconstruction of pavement or asphalt overlays and replacement of aggregate base),manhole adjustments, installation of pedestrian crossing signs (including pavement markings), installation of emblematic signs (demolition, excavation, and installation of top soil and grass), rehabilitation or replacement of lighting poles and luminaries, and may also include the installation of benches. The scope of work does not include actions within the *Plaza del Recreo Ramón Emeterio Betances*, and the approximate length of the project covers 5,540 linear meters.

Activities in the Floodway

The extent of the project in the floodway includes a series of narrow two-lane streets and associated infrastructure within the traditional urban center of Cabo Rojo. The existing infrastructure in this area includes damaged roads, narrow and/or obstructed sidewalks, curbs and gutters in poor conditions, damaged light poles, and missing or damaged street signs – all of which hinder pedestrian mobility; moreover, the overall infrastructure damages present at the site hinder the pedestrian accessibility of the elderly and persons with handicaps and/or disabilities. The purpose of the proposed project includes the removal of architectural barriers that hinder mobility and improvement of pedestrian and

road safety by widening some of the sidewalks, removal of obstructions from and/or reconstruction of handicap and disability accessible ramps, replacement of pavers, and the reconstruction and/or resurfacing of roads along the traditional urban center. Some of the existing ramps that do not or may not comply with ADA/accessible design standards will be demolished and relocated to comply with the regulation. Additionally, sidewalk lighting, ADA/accessible crossings and signage will be incorporated to ensure pedestrian safety, the concrete slabs of water meters (where any applicable reconstruction occurs) will be repaired as part of the reconstruction of some of the sidewalks, and manholes (where any applicable reconstruction occurs) will be adjusted in accordance with the PRASA's standards.

Supplemental Guidance

Include within the 8-Step Decision Making Process, an Accessibility Assessment Report based on the American with Disabilities Act standards prepared by a qualified professional and a detailed explanation of the current state of all aspects and parts of the streets that will be impacted because they are not ADA compliant/accessible and do not comply with current accessibility standards. There should be a direct relationship between the scope of project activities and the design elements described as necessary in accomplishing the intended purpose of the proposed project. All documentation should identify the project as being within the floodway and reference the applicable exception which makes possible the use of HUD CDBG-DR funds. Lastly, the 8-Step Decision Making Process should identify and evaluate measures to mitigate, avoid and minimize adverse direct and indirect impacts to the floodplain before, during and after implementation of the proposed project, to the greatest extent practicable.

Attachment C

Accessibility Assessment Report

Appendix A

Accessibility Assessment Report

PR-CRP-000845: Rehabilitación de la Infraestructura del Centro Urbano Cabo Rojo, PR

Project Overview

This report provides a comprehensive assessment of the sidewalk segment's accessibility and necessary drainage improvements. Ensuring compliance with 2010 ADA standards, as part of the requirements on CRP Program and Federal Funded projects and addressing flooding issues will significantly enhance the safety and usability of the pedestrian route.

The project involves the rehabilitation and reconstruction of several streets within the central urban zone of Cabo Rojo, the demolition and reconstruction of existing sidewalks, curbs and gutters, reconstruction of concrete pavements and gutters. The project also includes the repair or replacement of existing lighting poles.

Some areas within the project are in a flood-prone area as indicated by the current FEMA flood maps (Image 1, General Key Plan).

Image 1 – General Key Plan

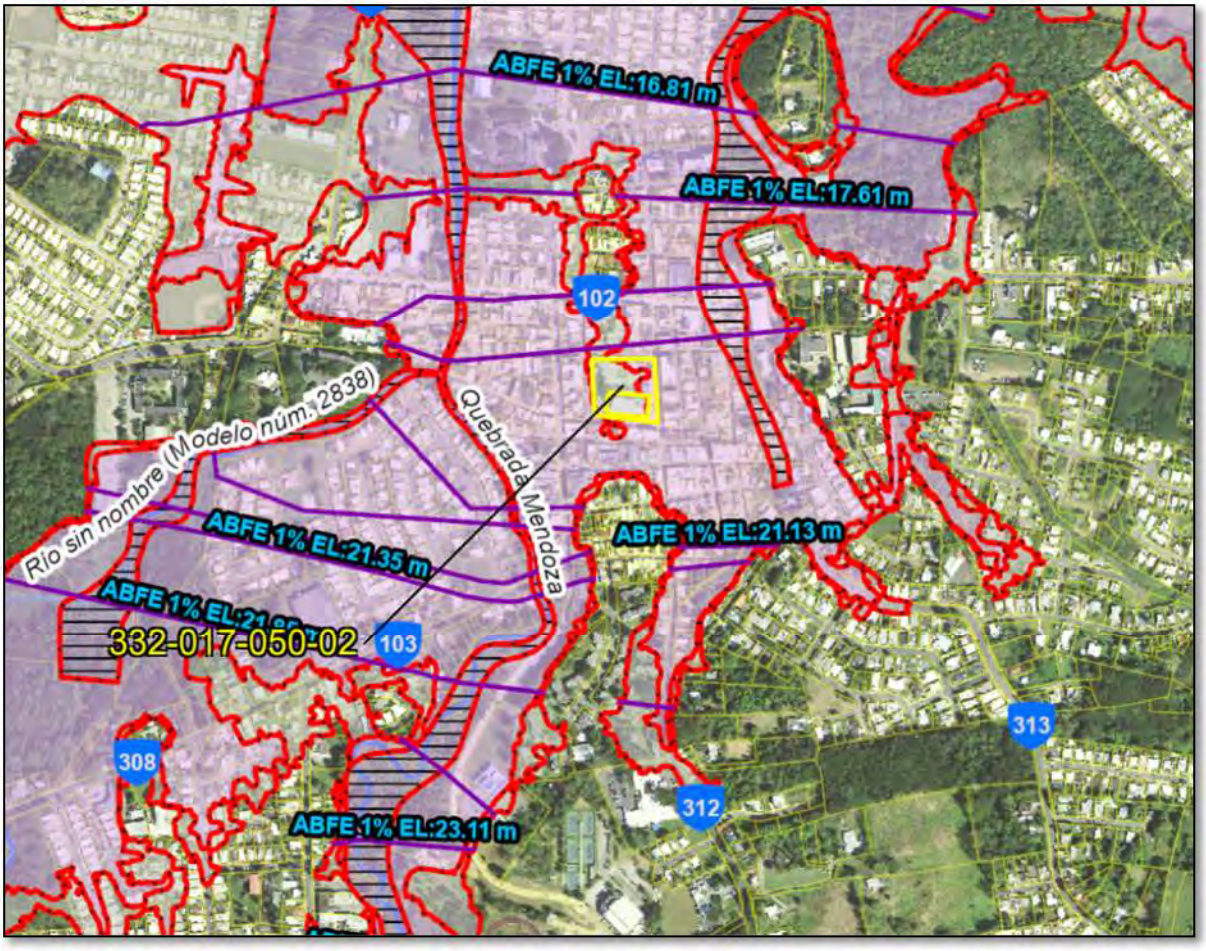


Image 2 – FEMA Flood Zone Map (ABFE)
Panel: 72000C1535J, effective date April/13/2018

The streets addressed within this report are identified on Dwg. No, by location # and street name as follows:

Dwg No.	Location #	Street	Description
C202	1	Calle Baldorioty	Within the floodway
C206	2	Calle Ruis Rivera	Within the floodway
C209	3	Calle Salvador Mestre	Within the floodway
C210	4	Calle Salvador Mestre	Within the floodway
C218	5	Calle Betances	Within the floodway
C220	6	Calle Maximo Gomez	Within the floodway
C224	7	Calle Jose de Diego	Within the floodway
C227	8	Calle Hostos	Within the floodway
C229	9	Calle Henna	Within the floodway

Table 1 - Existing Conditions inside the Floodway limits that don't Comply with Current Accessibility Standards:

Location (Street/dwg.#)	Existing Conditions	ADA Section/other improvement	Photos
Calle Baldorioty C202	Damaged sidewalk segment and concrete gutter nearby the existing culvert crossing (from station 5+10 to 5+40).	2010 ADAAG Section 35.151 & Section 403.5.1	Photos 1-2
Calle Ruis Rivera C206 (Intersection with Salvador Mestre St.)	Missing concrete gutter at the intersection.	Provide continuity of the runoff water and avoid flooding/ponding areas on sidewalks and controlling the runoff though the road.	Photos 3
Calle Salvador Mestre C209	HC ramps located at the corners without crossing markings and signage are not in compliance with ADA regulation.	2010 ADAAG Section 35.151	Photo 4
Calle Salvador Mestre C210	Damaged sidewalk segment (station 3+70).	2010 ADAAG Section 35.151 & Section 403.5.1	Photos 5-6-7
Calle Betances C218	Sidewalk width less than 3.0ft (0.91m) and damaged. Local bridge has no connection to existing sidewalk.	2010 ADAAG Section 35.151 & Section 403.5.1	Photos 8-9
Calle Maximo Gomez C220	Damaged gutter at intersection with Calle Hostos (station 1+50).	Provide continuity of the runoff water and avoid flooding/ponding areas on sidewalks and controlling the runoff though the road.	Photos 10-11
Calle Jose de Diego C224	Damaged sidewalk segment (from station 3+37 to 3+50).	2010 ADAAG Section 35.151	Photo 12

Calle Hostos C227	Damaged sidewalk and no pedestrian crossing or accessibility ramps (station 2+65 to 2+80).	2010 ADAAG Section 35.151 & Section 403.5.1	Photos 13-14
Calle Henna C229	Damaged sidewalk segment at the end of the street (Station 2+80)	2010 ADAAG Section 35.151	Photo 15

Based on ADA regulations for “Path of Travel”, sidewalk segments must provide a continuous, unobstructed way of pedestrian passage to ensure accessibility and safety. The 2010 ADA Standards for Accessible Design (ADAAG), Section 403.5.1 "Clear Width" states that the minimum clear width of walking surfaces shall be 36 inches.

The design elements proposed to mitigate the accessibility barriers within the floodway include:

1. Reconstruction of damaged sidewalks, curb and gutters segments to provide continuity to the pedestrian route.
2. Reconstruction of concrete gutters to provide continuity of the runoff water and avoid flooding/ponding areas on sidewalks and controlling the runoff though the road.
3. Reconstruction of sidewalk and new accessibility ramps for pedestrian crossings to maintain continuity for pedestrians.
4. Reconstruction of sidewalk segment to provide adequate with and continuity to the pedestrian’s route.

Image 3 – **Location 1** / *Calle Baldorioty* / Existing conditions illustrating floodway limit

On the image above (Image 3), the design for the proposed activities at the Regulatory Floodway located at the east side of the Baldorioty Street are illustrated and describes as following:

Photo 1 - Reconstruction of concrete sidewalk, curb and gutter.

Photo 2 - Reconstruction of concrete gutter. to provide continuity of the runoff water.

Image 4 – **Location 2** / *Calle Ruis Rivera* / Existing conditions illustrating floodway limit

On the image above (Image 4), the design for the proposed activities at the Regulatory Floodway at the east side of the Ruis Rivera Street are illustrated and described as following:

Photo 3 - Construction of new concrete gutter at the intersection for drainage control.

Image 5 – **Location 3** / *Calle Salvador Mestre*/ Existing conditions illustrating floodway limit

On the image above (Image 5), the design for the proposed activities at the Regulatory Floodway at the north side of the Salvador Mestre Street are illustrated and described as following:

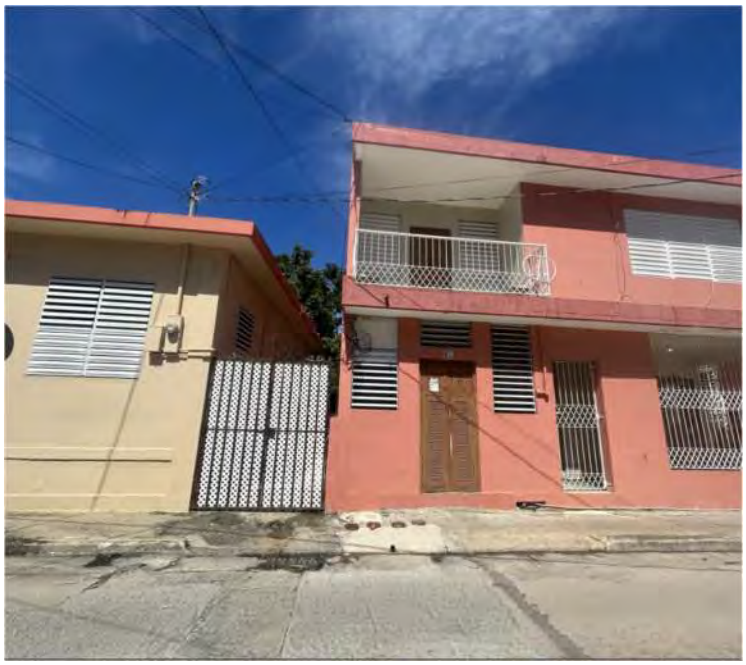


Photo 4 - Reconstruction of concrete sidewalk (1.22m width), curb and gutter.

Image 6 – **Location 4** / *Calle Salvador Mestre*/ Existing conditions illustrating floodway limit

On the image above (Image 6), the design for the proposed activities at the Regulatory Floodway at the north side of the Salvador Mestre Street are illustrated and described as following:

Photo 5 - Reconstruction of concrete sidewalk, curb and gutter, and new ramp and pedestrian crossing in compliance with ADA regulations.

Photo 6 – Diagonal ramp was eliminated. Reconstruction of concrete sidewalk, curb and gutter, and new ramp and pedestrian crossing in compliance with ADA regulations.

Photo 7 - Diagonal ramp was eliminated. New ramp
and pedestrian crossing in compliance with ADA regulations.

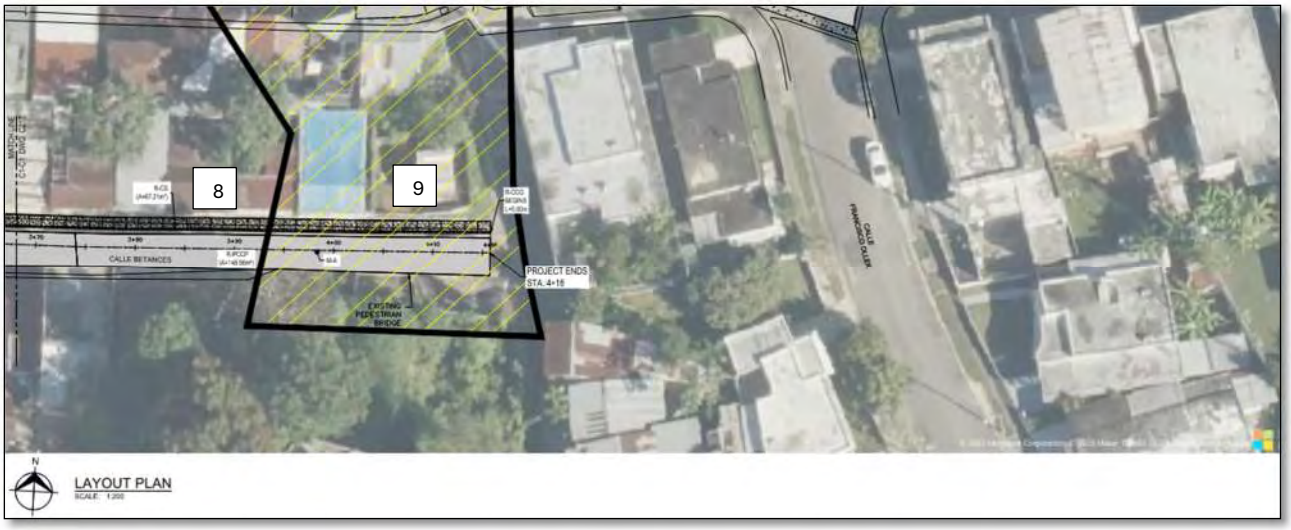


Image 7 – **Location 5** / Calle Betances / Existing conditions illustrating floodway limit

On the image above (Image 7), the design for the proposed activities at the Regulatory Floodway that extends at the end of the Betances Street. are illustrated and described as following:

Photo 8 - Reconstruction of concrete sidewalk, curb and gutter providing a minimum width of 1.22m.

Photo 9 – Reconstruction of concrete sidewalk, curb and gutter providing a minimum width of 1.22m.

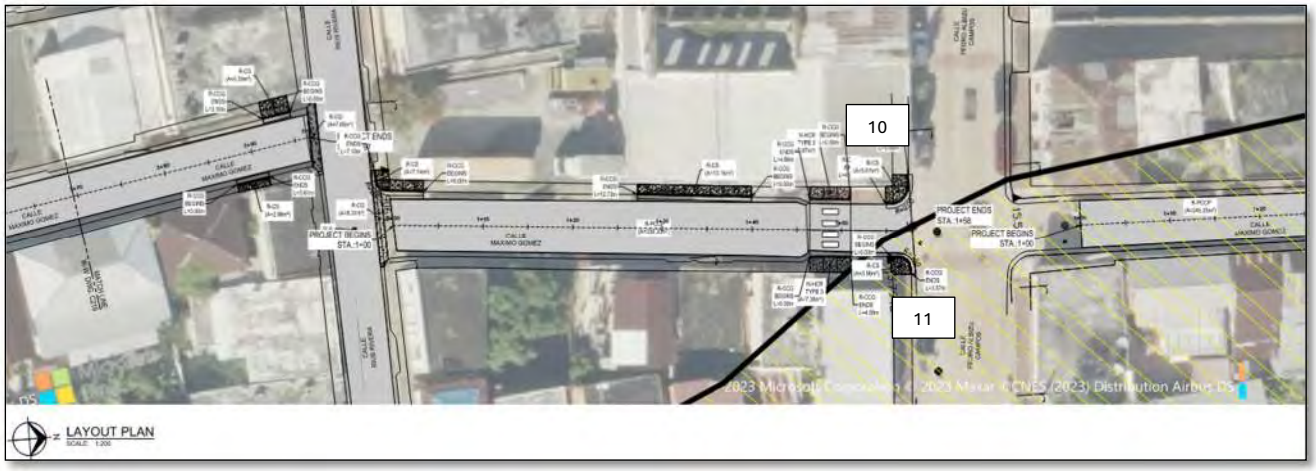


Image 8 – **Location 6** / Calle Máximo Gomez / Existing conditions illustrating floodway limit

Image 9 – **Location 6** / Calle Máximo Gomez / Existing conditions illustrating floodway limit

On the image above (Image 8 and 9), the design for the proposed activities at the Regulatory Floodway at the end of the Máximo Gomez Street are illustrated and described as following:

Photo 10 - Reconstruction of concrete sidewalk, curb and gutter, and new ramp and pedestrian crossing in compliance with ADA regulations.

Photo 11 – Diagonal ramp was eliminated. Reconstruction of concrete sidewalk, curb and gutter, and new ramp and pedestrian crossing in compliance with ADA regulations.

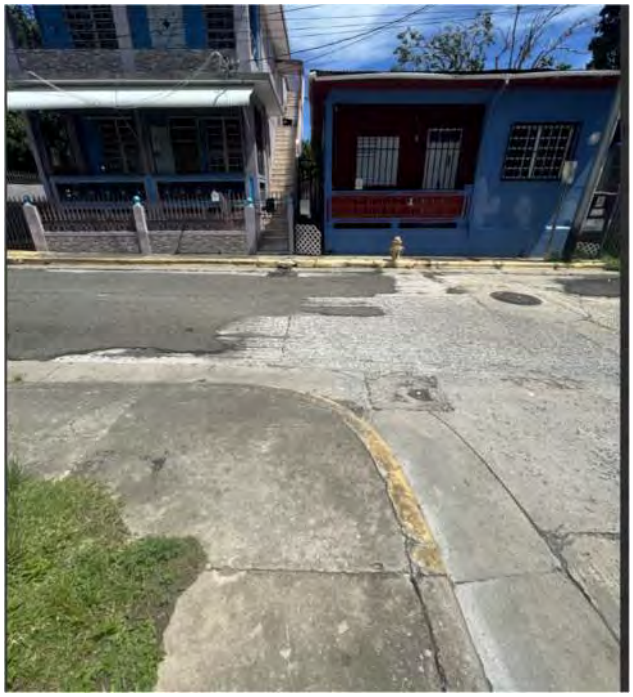


Photo 12 – Construction of concrete gutter to provide continuity of the runoff water

Image 10 – **Location 7** / Calle José de Diego / Existing conditions illustrating floodway limit

On the image above (Image 10), the design for the proposed activities at the Regulatory Floodway that extends at the end of the José de Diego Street (from sta 3+37 to 3+50) are illustrated and described as following:

Photo 13 - Reconstruction of concrete sidewalk, curb and gutter.

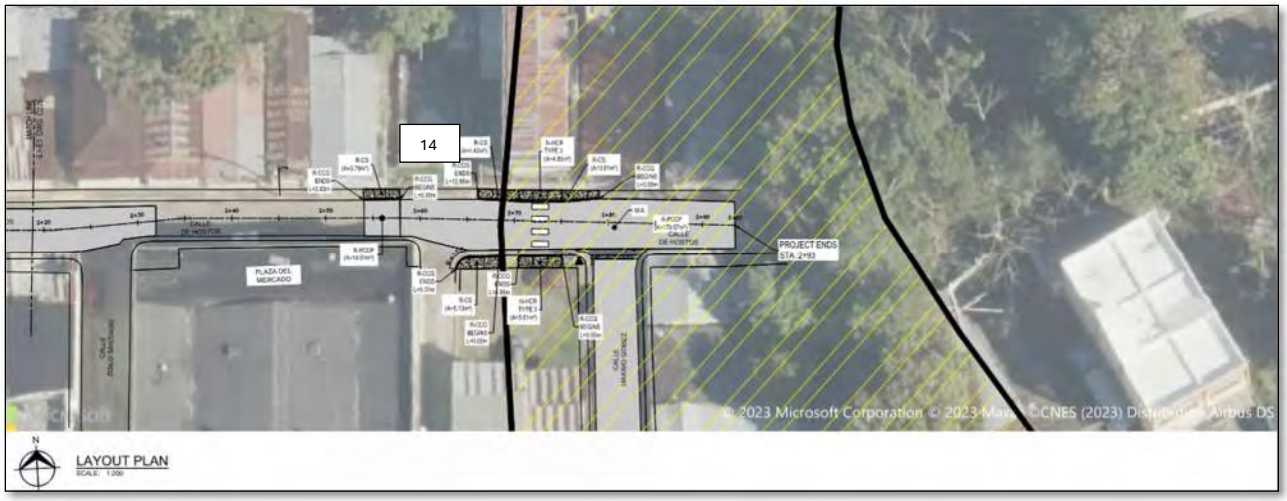


Image 11 – **Location 8** / Calle Hostos / Existing conditions illustrating floodway limit

On the image above (Image 11), the design for the proposed activities at the Regulatory Floodway that extends from sta 2+65 to 2+80 at the rear west side of the Hostos Street are illustrated and described as following:

Photo 14 - Reconstruction of concrete sidewalk (1.22m width) curb and gutter. New pedestrian crossing with ramps.

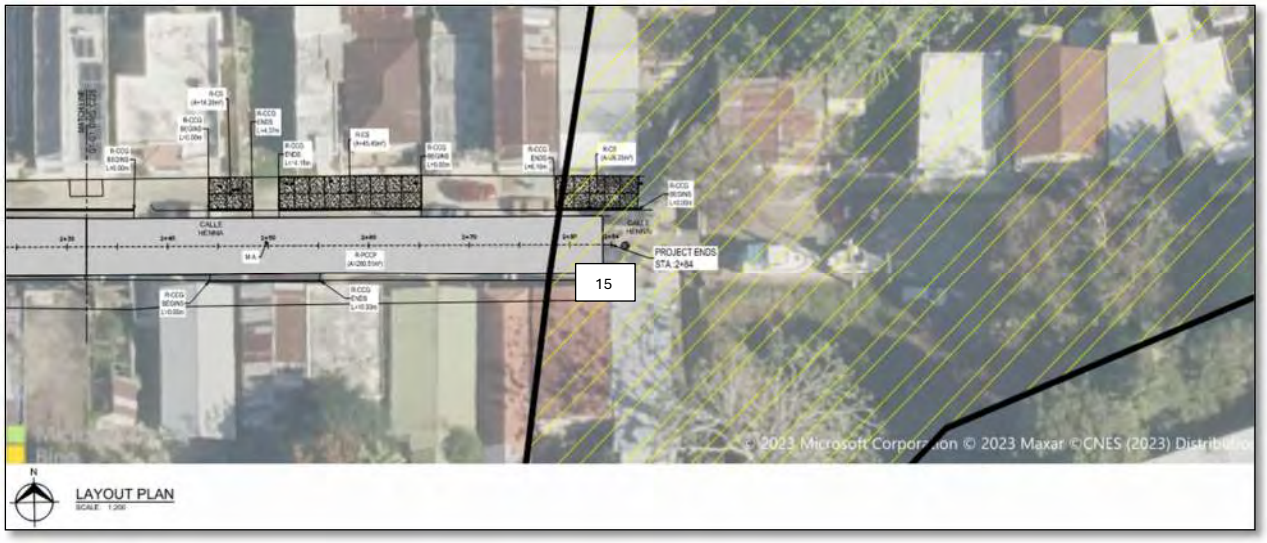


Image 12 – **Location 9** / Calle Henna / Existing conditions illustrating floodway limit

On the image above (Image 12), the design for the proposed activities at the Regulatory Floodway that at sta 2+80, at the end of Henna Street are illustrated and described as following:

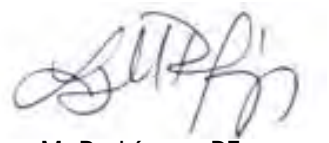
Photo 15 - Reconstruction of concrete sidewalk, curb and gutter.

The project complies with HUD's Floodplain Management and Protection of Wetlands regulation that states: *Project is in the floodway but consist of repairs to existing construction (including improvements) or reconstruction following destruction caused by a disaster.* [24 CFR Part 55.1 (c) (3)], making it possible to use the HUD CDBG-DR funds assigned.

Improving the sidewalk segment to meet ADA standards and addressing drainage issues are crucial for ensuring a safe and accessible pedestrian route. Implementing the recommended enhancements will provide a continuous, accessible path for all users and prevent flooding-related hazards.

Improving the curb and gutter on this point will address drainage issues, crucial for ensuring a safe and accessible pedestrian route. Implementing the recommended enhancements will provide a continuous, accessible path for all users and prevent flooding-related hazards.

Report prepared by:



Luz M. Rodríguez, PE

Benítez, Ramos & Associates, LLC

Appendix F

SHPO Consultation Package

GOVERNMENT OF PUERTO RICO
STATE HISTORIC PRESERVATION OFFICE
Executive Director | Carlos A. Rubio Cancela | carubio@prshpo.pr.gov

Monday, March 17, 2025

Lauren B Poche

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

SHPO-CF-08-01-24-06 PR-CRP-000845 (Cabo Rojo), Rehabilitación de la Infrastructura Project

Dear Ms. Poche,
We acknowledge receipt of the archaeological monitoring work plan submitted on February 18, 2025, prepared by archaeologist Victor Oppenheimer for the case mentioned above. The plan is deemed acceptable conditioned that the following modifications to the plan are accepted:
1. IV. Archaeological Monitoring Procedure, B. During Demolition and Construction, stipulation 6 (Page. 12.) and stipulation 10 (Page. 14) must be removed from the archaeological monitoring work plan.
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/ OJR

GOVERNMENT OF PUERTO RICO
STATE HISTORIC PRESERVATION OFFICE
Executive Director | Carlos A. Rubio Cancela | carubio@prshpo.pr.gov

Wednesday, August 28, 2024

Lauren B Poche

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

SHPO-CF-08-01-24-06 PR-CRP-000845 (Cabo Rojo), Rehabilitación de la Infrastructura Project

Dear Ms. Poche,
Our Office has received and reviewed 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.

After a review of all the documentation, the PRSHPO concurs with your determination that the proposed project will have no adverse effect on historic properties for this undertaking conditioned to archaeological monitoring during ground disturbing activities for the project. An archaeology monitoring work plan must be summited to PRSHPO for its review and concurrence before any works initiates.

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/ OJR

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

April 30, 2024

Arch. Carlos A. Rubio Cancela
Executive Director
Puerto Rico State Historic Preservation Office
Cuartel de Ballajá, Third Floor
San Juan, Puerto Rico 00901

Re: Authorization to Submit Documents for Consultation

Dear Arch. Rubio Cancela,

The U.S. Department of Housing (HUD) approved the allocations of Community Development Block Grant (CDBG-DR) funds on February 9, 2018. It also approved the allocation of Community Development Block Grant Mitigation (CDBG-MIT) funds on January 27, 2020. The purpose of these allocations is to address unsatisfied needs as a result of Hurricanes Irma and Maria in September 2017; and to carry out strategic and high-impact activities to mitigate disaster risks and reduce future losses.

To comply with the environmental requirements established by HUD, the Department of Housing of Puerto Rico (PRDOH) contracted Horne Federal LLC to provide environmental review services, among others, that will support the objectives of the agenda for both CDBG-DR and CDBG -MIT Programs.

To expedite the processes, Horne Federal LLC, is authorized to submit to the State Historic Preservation Officer, documentation of projects related to both the CDBG-DR and CDBG-MIT on behalf of PRDOH.

Cordially,

Aldo A. Rivera Vázquez, PE
Director
Division of Environmental Permitting and Compliance
Office of Disaster Recovery

August 1, 2024

Carlos A. Rubio Cancela
State Historic Preservation Officer
Puerto Rico State Historic Preservation Office
Cuartel de Ballajá (Tercer Piso)
San Juan, PR 00902-3935

Puerto Rico Disaster Recovery, CDBG-DR City Revitalization (City-Rev) Program

Section 106 NHPA Effect Determination Submittal for PR-CRP-000845, Rehabilitación de la Infrastructura del Centro Urbano Project, Cabo Rojo, Puerto Rico – *No Adverse Effect Conditioned*

Dear Architect Rubio Cancela,

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 (PRDOH) aims to lead a comprehensive and transparent recovery for the benefit of Puerto Rico residents. To faithfully comply with HUD's environmental requirements, the Puerto Rico Department of Housing contracted Horne Federal, LLC (HORNE) to provide environmental records review services that will support the Department's objectives Puerto Rico Housing (PRDOH) for CDBG-DR.

On behalf of PRDOH, we are submitting documentation for the proposed Rehabilitación de la Infrastructura del Centro Urbano Project. The Municipality of Cabo Rojo is proposing the revitalization of streets, sidewalks and curbing, lighting elements and associated electrical work, utility repairs such as mainholes addition of ADA compliance, and the installation of two emblematic signs at either end of Calle Pedro Albiz as one enters the urban center. These activities are within the National Register of Historic Places eligible Cabo Rojo Traditional Urban Center. The full scope of the project is described in the submitted documentation, which includes mapping, photographs, and the 100% construction plans.

Based on the provided documentation, the Program requests a concurrence with a determination that **no adverse effect** to historic properties is appropriate for this undertaking, conditioned to archaeological monitoring for all ground disturbing activities. An archaeological monitoring plan will be prepared and submitted to the PRSHPO for review and approval of its appropriateness. Additionally, character defining features of adjacent historic buildings will be protected from damage during construction.

Please contact me with any questions or concerns by email at lauren.poche@horne.com or phone at 225-405-7676.

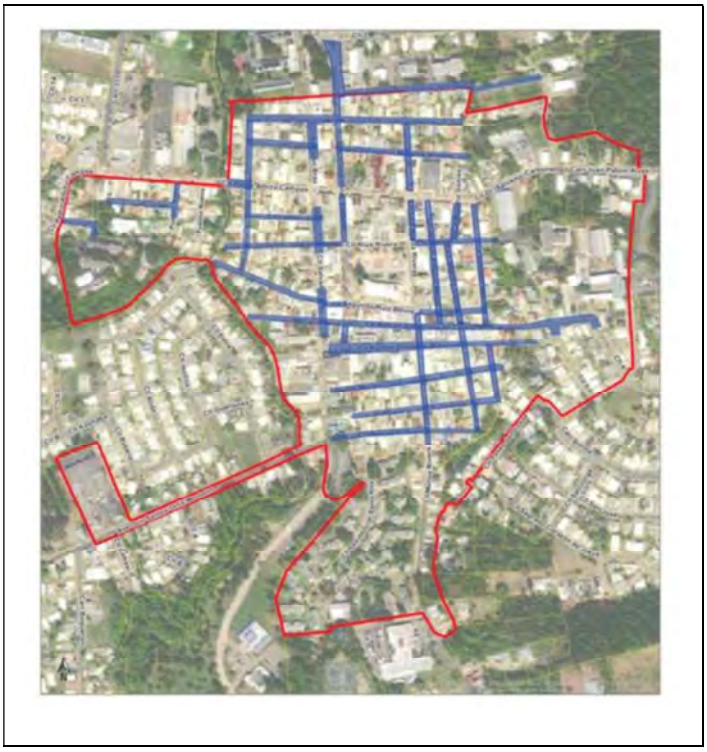
Kindest regards,

Lauren Bair Poche. M.A.
Architectural Historian, EHP Senior Manager
Attachments

Revised Monitoring Plan, per SHPO response

PUERTO RICO DEPARTMENT OF HOUSING - CDBG-DR PROGRAM **CITY REVITALIZATION PROGRAM (CRP)** **ARCHEOLOGICAL MONITORING PLAN**	
SUBRECIPIENT: Municipality of Cabo Rojo	**PROJECT ID: PR-CRP-000845**
PROJECT NAME: Infrastructure Rehabilitation in the Urban Center of Cabo Rojo, P.R.	**SHPO ID:** SHPO-CF-08-01-24-06
LOCATION: Cabo Rojo Urban Center	
COORDINATES: Approx. 18.087046° N, -67.148151° W	**TPID (CADASTER):** N/A

TYPE OF ACTIVITY: **x SUBSTANTIAL REPAIR (RECONSTRUCTION)** ☐ **NEW CONSTRUCTION**	**CONSTRUCTION DATE:** (AH est.): 1771 **PROPERTY AREA (SIZE):** 61.25 acres
QUALIFIED ARCHEOLOGIST (NAME): Victor Oppenheimer Rodriguez, M.A	**MONTH/YEAR PREPARED:** February, 2025; Revised March 19, 2025 by Kristin Sanders per SHPO response letter.



This document complies with applicable federal and state laws, regulations, and guidelines, and is consistent with the Secretary of the Interior's (SOI) Guidelines for Archeological Documentation, the Advisory Council on Historic Preservation's (ACHP) recommendations on the recovery of significant information from archaeological sites as updated in 2009. The plan was prepared by Victor Oppenheimer Rodriguez, who meets the Professional Qualifications Standards set forth in 36 CFR Part 61.

I. OVERVIEW/PREAMBLE

The Municipality of Cabo Rojo was approved Community Development Block Grant disaster recovery funds financed by the Federal Department of Housing and Urban Development in the aftermath of damages received by the 2017 Hurricanes Irma and Maria. An Agreement was established with the Puerto Rico Department of Housing (PRDOH) for the City Revitalization Program funds as part of the Community Development Block Grant for Disaster Recovery (CDBG-DR) Program. The Municipality of Cabo Rojo was approved to rehabilitate and renovate "Infrastructure Rehabilitation in the Urban Center of Cabo Rojo, PR" and strategically restore it as a resilience area for the community, while preserving the historic development of the space and of the Municipality of Cabo Rojo. The Puerto Rico State Historic Preservation Office (PRSHPO), in a letter dated August 28, 2024, concurred with a decision of No Adverse Effect for this undertaking, conditioned to the implementation of an archaeological monitoring during all ground disturbing activities.

The undertaking will repair damages caused by hurricanes Irma and Maria and involves the revitalization of approximately 6.39 km of streets, sidewalks, lighting, and other infrastructure within the traditional urban center of Cabo Rojo, PR, excluding the area covered by the Ramón E. Betances Main Square project.

The direct APE encompasses the public rights-of-way along approximately 6.39 km of streets and sidewalks within the NRHP-eligible Cabo Rojo Traditional Urban Center. This includes all or portions of 20 municipal streets in the historic core of Cabo Rojo (see Project Description). The direct APE has an approximate total dimension of 2.4 km north-south by 1.2 km east-west. It is bounded by Calle Ríos Rivera to the north, Ave Hostos to the south, Calle Salvador Mestre to the east, and Calle Jose de Diego to the west. The visual APE corresponds with the viewshed of the direct APE and consists of the NRHP-eligible Cabo Rojo Traditional Urban Center. This covers an area approximately 3 km by 2 km, focused on resources adjacent to the direct APE.

Objectives: This archaeological monitoring plan aims to: (1) institute measures to prevent indirect adverse effects to known historical resources; (2) implement the protocol to be followed in archaeological monitoring; (3) establish the procedure to be followed if previously unknown resources are identified; (4) set up the procedure to be followed if there are any unexpected or previously unanticipated adverse effects; (5) detect, assess and keep record of archaeological resources during project development; (6) retrieve as much archaeological information as possible during excavation and construction; (7) to preserve and enhance the value of the archaeological resources located and documented; and (8) if the archaeological resource cannot be preserved in situ, to conserve it through documentation (preservation by record).

Figure 1. Aerial imagery from Google Earth 2022 depicting the project area, direct APE (blue outline), the visual APE (green outline) and the Cabo Rojo Public Plaza (orange outline). **(*2022 Aerial Imagery, from Medina Carrillo et al. 2024: 22*)**

This scope of work is divided into six (6) sections and two (2) appendices. The section following this preamble discusses the proposed construction works. The third section includes a brief description of the historic properties located within the APE and of the archaeological potential of the area. The fourth section provides a detailed description of the archaeological monitoring procedure to be carried out before, during and after the construction works. Section V includes the professional qualifications of the team that will implement this monitoring plan, and the last section includes the references cited. The plan closes with an appendix with a model of a monitoring daily activity sheet (Appendix A) and SHPO letter (Appendix B):

- Overview/Preamble: An introductory statement that outlines the purpose and guiding principles of this document.
- Project Description: The proposed construction activities and scope of work.
- Historic Properties within the APE: A summary of the historic properties and areas of archaeological potential effects (APEs).
- Archaeological Monitoring Procedure: Details of the archaeological monitoring procedure to be executed before, during and after construction.

- Professional Qualifications: An archeologist monitor in compliance with the qualifications of the Secretary of the Interior Standard (SOI).
- Cited References: A list of cited references, including an Appendix (A) with a *Monitoring Daily Activity Shee*t template and Appendix (B) SHPO letter.

II. PROJECT DESCRIPTION:

The information below is taken from the Section 106 NHPA Effect Determination Form completed by Archaeologist Norma Carrillo & Fernando Alvarado in June 2024 (revised in July 2024).

The proposed project involves the revitalization of approximately 6.39 km of streets, sidewalks, lighting, and other infrastructure within the Traditional Urban Center of Cabo Rojo, PR, excluding the area covered by the Ramón E. Betances Main Square project.

- An evaluation of subsoil conditions should be carried out, if applicable.
- Rehabilitation of damaged sidewalk and curb areas, including repair or replacement of existing cobblestones or brick details with equal or similar materials.
- Replacement, repair, or rehabilitation of street light fixtures, poles, and bases. This includes evaluating functionality, replacing damaged poles, installing missing posts, and painting, if necessary.
- Installation of two emblematic signs, one at each end of Calle Pedro Albizu as one enters the urban center.
- Addressing barriers affecting circulation for people with disabilities via ADA improvements, signage, and finishes.

The below-ground disturbance activities include:

- Milling and demolition of damaged asphalt street surfaces to a depth of 2-4 inches.
- Selective demolition and replacement of damaged sidewalks and curbs, involving excavation up to 6 inches deep.
- Installation of new street lighting pole foundations, requiring excavation up to 3 feet deep and 2 feet wide.
- Installation of wayfinding signage footers, requiring excavation of narrow holes up to feet deep.
- Trenching for new wiring with trenches estimated to be 3 feet deep and 2 feet wide.
- Sidewalk and curb ramp repair involving subsurface excavation up to 6 inches deep.
- Utility structure repairs like manholes requiring excavation up to 4 feet deep and 4 feet wide.
- The plans also propose the removal and excavation of between 1 foot (12 inches) to a maximum of 1.33 feet (16 inches) in the street section (concrete) to rebuild it and maintain levels like the existing ones.

The direct APE covers an area approximately 2.4 km from north to south and 1.2 km from east to west. It is bounded by Calle Ríos Rivera to the north, Avenida Hostos to the south, Calle

Salvador Mestre to the east, and Calle José de Diego to the west. The project area includes **20** municipal streets within the Traditional Urban Center, totaling approximately **6.39 km**:

1. **Calle Muñoz Rivera** (North-South)
2. **Calle Manuel F. Rossy** (East-West)
3. **Intersection of PR-103 & PR-308** (North-South)
4. **Calle Pueblo Nuevo (Calle Carbonell)** (East-West)
5. **Calle Ángel Franco** (South-North)
6. **Calle Henna** (West-East)
7. **Calle José de Diego** (East-West)
8. **Calle Baldorioty de Castro** (West-East)
9. **Calle Salvador Mestre** (South-North)
10. **Calle Hostos** (East-West)
11. **Calle Maceo** (East-West)
12. **Calle Máximo Gómez** (South-North)
13. **Calle Labra** (East-West)
14. **Calle Ruíz Belvis** (West-East)
15. **Calle Betances** (West-East)
16. **Calle Mariano Quiñones** (East-West)
17. **Calle Jiménez** (West-East)
18. **Calle Ríos Rivera** (East-West)
19. **Calle Barbosa** (South-North)
20. **Corredor Zolio Santiago**

III. HISTORIC PROPERTIES WITHIN THE APE:

The information below is taken from the Section 106 NHPA Effect Determination Form completed by Archaeologist Norma Carrillo & Fernando Alvarado in June 2024 (revised in July 2024).

Area of Potential Effects

As defined in 36 CFR §800.16(d), the area of potential effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such properties exist.

Based on this definition and the nature and scope of this infrastructure rehabilitation undertaking, the direct APE encompasses the public rights-of-way along approximately 6.39 km of streets and sidewalks within the NRHP-eligible Cabo Rojo Traditional Urban Center. This includes all or portions of 20 municipal streets in the historic core of Cabo Rojo, as listed in the project description.

The direct APE has an approximate total dimension of 2.4 km north-south by 1.2 km east-west. It is bounded by Calle Rios Rivera to the north, Ave Hostos to the south, Calle Salvador Mestre to the east, and Calle Jose de Diego to the west. The visual APE corresponds with the viewshed of the direct APE and consists of the NRHP-eligible Cabo Rojo Traditional Urban

Center. This covers an area approximately 3 km by 2 km, focused on resources adjacent to the direct APE.

Eligible Historic Properties Within the APE

There is only one NRHP-Listed property within the APE.

1. James L.M. Curry Vocational High School - Listed 1988. Located at 18.085925° N, -67.146937° W, on Calle Betances within the project area. The James L.M. Curry Vocational High School (listed 1988), located on Calle Betances, is within the indirect/visual APE.

Field surveys that occurred during the Section 106 preparation process yielded a list of Potentially Eligible Properties.

- Calle Mariano Quiñones - Cluster of early 20th century vernacular residences located within project area.
- Calle Ruiz Belvis - Late 19th century commercial structures located within project area.
- Calle Barbosa - Mix of 19th and early 20th century residences and commercial buildings within project area.
- City Hall – Located at 18.085685, -67.146742. It has an architectural style that incorporates historicism and eclectic, with Hispano-Arab elements (lobed arches) and classical. It was constructed in 1907, with an intervention in 1958.
- Municipal Cemetery Las Delicias/San Martín de Porres – Located at 18.094890, -67.149681. It was constructed between 1813 and 1880 and has several three-story niche structures in brick, with vaults of the same material.
- Bracero Cafeteria – Located at 18.086079, -67.145716. It was constructed around 1900 and is a wooden building with a four-sloped roof, corresponding to the typology of a wooden Creole house, although is for commercial use.
- Pedro F. Corberg School – Located at 18.087529, -67.143609. It was constructed between 1920 and 1936 and features elements of classic and mannerist architecture.
- Dr. Héctor "Jr." Marty Carrillo Multiple Activities and Services Center – Located at 18.088690, -67.144052. It was constructed around 1917 and corresponds to the typology of municipal hospitals from the early part of the 20th century.
- Presbyterian Church of Cabo Rojo – Located at 18.086061, -67.146801. Its foundation dates to 1903, although the building appears to have been remodeled.
- San Miguel Arcángel Parish– Located at -18.086789, -67.146130. The original construction dates to 1785, though it has undergone modifications, especially to the façade and roof, it keeps predominantly classic architectural elements.
- Masonic Lodge Cuna de Betances No. 42 – Located at 18.085745, -67.145884 and birthplace of Ramón E. Betances y Alacán, this building combines classic elements with pointed arches and a reduced barrel vault ceiling.

- Dr. Ramón Emeterio Betánces y Alacán Plaza – Locates at 18.087148, -67.146139. This building contains historic and contemporary sculptural elements, as well as an acoustic shell.
- Lolita Montalvo Cordero Market Plaza – Located at 18.086102, -67.146326. It was built in 1908, with repairs and remodeling in subsequent years.
- Residential Santa Rita de Casia – Located at 18.083062, -67.14619. It was originally consisted by 21 buildings and was occupied in 1954.
- Excelsior Theater – Located at 18.086108, -67.146025. It was originally consisted of a nave with a gabled roof, with a façade suggesting the form of a pediment and pilasters and today functions as a cinema.

General Historic Context & Archaeological Potential

The Traditional Urban Center of Cabo Rojo, Puerto Rico, represents a historically significant landscape shaped by centuries of settlement, trade, and urban development. The direct APE for this project spans 6.39 km, encompassing historic streets and sidewalks that have been integral to the town's growth since its official founding in 1771 as San Miguel Arcángel. The grid pattern of streets, which remains visible today, reflects the town's colonial planning principles, oriented north-south and east-west, around a central plaza that continues to serve as Cabo Rojo's civic and cultural nucleus.

Spanish settlement in the southwestern coast of Puerto Rico began in the early 16th century, initially focused on salt production, a key industry that influenced Cabo Rojo's economic foundations. By the mid-18th century, the area saw an influx of settlers moving inland to raise livestock and establish permanent homesteads. The demand for a local church and administrative center led to the formal founding of Cabo Rojo in 1771, with its early urban growth tied to agriculture and maritime trade. The central plaza and surrounding streets, including those now within the direct APE, were integral to the town's early expansion, with infrastructure like roads, bridges, and mills playing an essential role in sustaining the economy.

The 19th century brought significant expansion with the introduction of cash crops such as coffee, tobacco, rice, and sugarcane, bolstering Cabo Rojo's wealth. This period saw an influx of European and South American immigrants and the establishment of wealthy plantation homes and commercial structures, many of which were located along the streets now included in the direct APE. By the late 19th century, railroads and small industries began reshaping the urban landscape, contributing to Cabo Rojo's industrial and transportation network. This transformation is evident in the Cabo Rojo Railroad Station (CR-02-00006) on No. 4 Barbosa Street, which falls directly within the direct APE. This station, part of the A.R.R. railway system, facilitated the movement of agricultural goods and manufactured products, sustaining the local economy into the early 20th century.

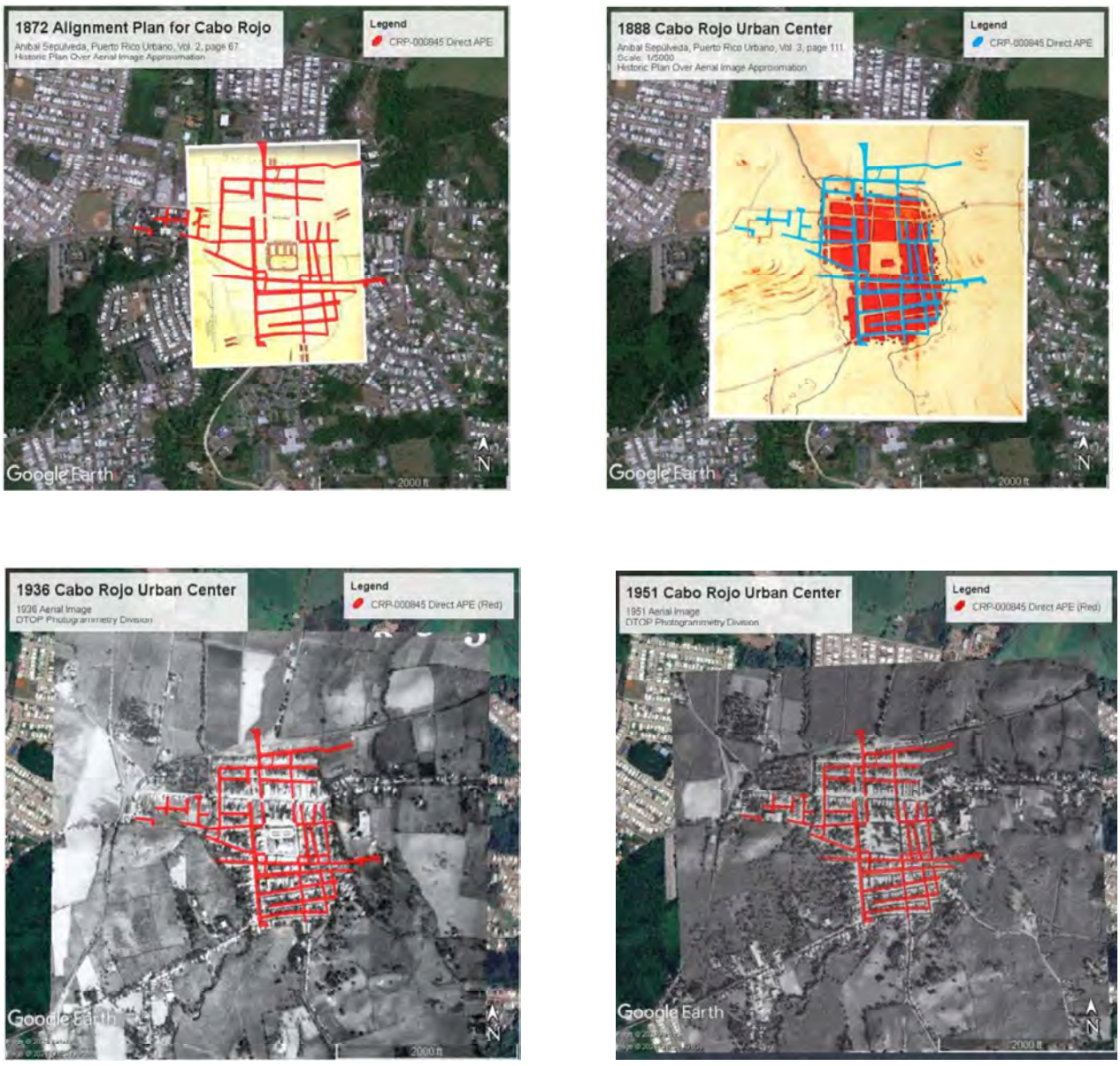


Figure 2. Approximate alignment of historic plans and aerial image overlays highlighting urban continuity. The descriptions are as follows: 1872 Alignment Plan for Cabo Rojo (top-left), 1888 Cabo Rojo Urban Center (top-right), 1936 Cabo Rojo Urban Center (bottom-left), 1951 Cabo Rojo Urban Center (bottom-right). (*Taken from Medina Carrillo et al. 2024: 6-7, 34-35*).

Among the most significant archaeological sites within the direct APE is Garrow Site 19 (CR-02-00005 / CR-118), located at No. 49 Maximo Gomez Street. This site represents the remains of a 19th-century hacienda, demolished in 1986. Archaeological investigations conducted by Garrow & Associates in 1985 revealed 196 ceramic fragments and construction materials, including bricks manufactured by Juan Bautista Buyé, a local brickmaker. The site aligns with

the period of agricultural expansion in the 19th century, when plantation estates played a dominant role in the town's economy. The presence of brick foundations, ceramic materials, and construction debris indicates the possibility of subsurface remains, warranting high sensitivity during any ground disturbances.

The San Miguel Arcángel Church (CR-02-00027), located on the Public Square of Cabo Rojo, provides another layer of historical continuity. Built in 1771, the church and its surrounding streets (including Calle Rios Rivera and Calle Betances) were central to the early colonial settlement pattern. Archaeological investigations at the church (CAT-CR-05-24-05 and CAT-CR-10-36-04) identified historic walls, a buried water cistern, and the original staircase leading to the church entrance. Additionally, evidence suggests that the original cemetery for the town extends east of the church, indicating a moderate to high probability of encountering human remains or associated funerary materials in any subsurface work within this area.

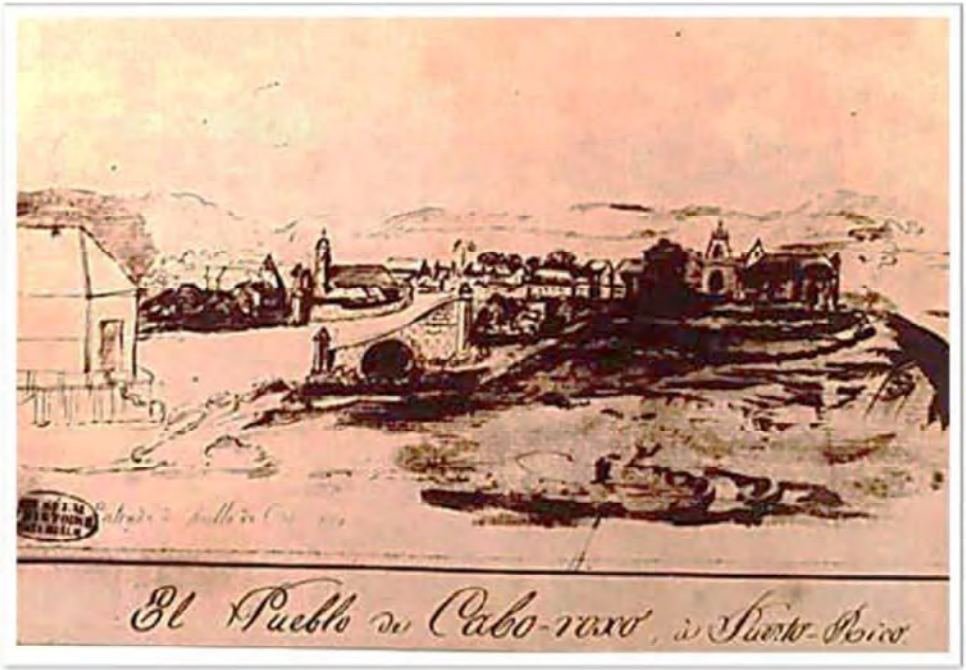


Figure 3. "El Pueblo de Cabo Rojo de Puerto Rico" by Augusto Pleé. It depicts a church, which reassembles the architectural components of the San Miguel Arcángel Church. (*Taken from Medina Carrillo et al. 2024: 4*).

The Carbonell Power Plant (CR-02-00011), another historic property within the direct APE, reflects industrial advancements in Cabo Rojo during the early 20th century, following Puerto Rico's transition to U.S. administration in 1898. As coffee cultivation declined, local industries like power generation and small-scale manufacturing helped sustain economic activity. The James L.M. Curry Vocational High School (NRHP-listed, 1988) on Calle Betances is another example of this shift, representing early 20th-century educational infrastructure that catered to the changing needs of the community. This site will be directly affected by

roadway, sidewalk, and lighting improvements, in which a high sensitivity should be placed during the archaeological monitoring.

Cabo Rojo's railroad infrastructure, developed in the late 19th and early 20th centuries, was crucial for connecting local industries to regional and international markets. Within the indirect APE, archaeological monitoring identified Puente de Ferrocarril #1 (CR-186), a small railroad bridge located 0.07 miles northeast of the project area. Although not directly affected by the proposed undertaking, its proximity emphasizes Cabo Rojo's historical role as a transportation hub. Similarly, the identification of two railroad bridges in the indirect APE during a Phase IA-IB study by Eduardo Questell Rodríguez (CR-97-11-07) suggests that subsurface remnants of transportation infrastructure could exist within the direct APE.

Ground disturbances along Maximo Gomez Street, Barbosa Street, Betances Street, and the Public Square have the potential to expose buried water channels, historic masonry foundations, construction materials, and artifact deposits. Subsurface investigations should particularly focus on areas where 19th-century structures once stood, as well as near sites with documented archaeological discoveries, such as Garrow Site 19 and the San Miguel Arcángel Church.

IV. ARCHAEOLOGICAL MONITORING PROCEDURE

The monitoring activities can be divided into three groups: activities before the project begins, activities during construction, and post-construction activities. Monitoring is limited to activities that entail demolition and excavations. Those construction activities that do not entail excavations or earth movements do not require an archaeological monitor. However, if there are activities with heavy equipment taking place in the vicinity of historic buildings, there should be a monitor present to prevent accidents and indirect impacts accidents and indirect impacts.

A. Before Construction Begins

1. The Construction Manager (CM) will notify the Project Manager (PM), Grant Manager (GM), and Monitor of the proposed activities' start date. The PM is responsible for coordination between the CM and the SOI-qualified archaeologist who will oversee the monitoring (Monitor). The GM shall notify the State Historic Preservation Office (SHPO) of the construction start date and the archaeology company charged with implementing this Plan.
2. Before any demolition or construction begins, the PM, CM, GM, and Monitor will have a kickoff meeting to discuss the procedure for archaeological monitoring, including the coordination protocol between the Monitor and the Contractor. The Monitor will provide an orientation on the area's cultural resources and potential resources and their proper treatment. The Monitor will also explain which project activities require archaeological monitoring.
3. The CM, PM, and construction crew will complete and sign a statement outlining the activities that may not be performed without the Monitor's presence, demonstrating their understanding and commitment to following the archaeological monitoring procedures.

4. The Monitor will document the historic properties (NRHP-listed and eligible) located within the project's area of potential effects by means of verbal descriptions and photographs. This documentation shall be included as an appendix to the first weekly report.

B. During Demolition and Construction

1. The Monitor shall be in the field during all project activities involving demolition and ground disturbance; access and clear sightlines to all demolition and excavation activities and debris removal will be provided to the Monitor. In the event of simultaneous excavations in different areas of the project, an archaeologist should be assigned to each area.
2. The Monitor shall provide instructions directly to the construction field personnel concerning how to proceed when there is a potential to impact an archaeological resource. The construction field personnel will abide by these requests: excavate slowly, stop the excavation work to evaluate a finding, etc.
3. The Monitor shall keep a record of monitored activities. The Monitor shall fill out the Daily Record of Activities Form (see **Error! Reference source not found.**). These Forms will be attached to the final report as an appendix. These forms should be sent weekly to the GM for review.
4. The reports will be prepared, including photos of the area of interest. These shall be emailed to the GM during the following week in which the monitoring was conducted. The PRDOH or the GM on behalf of PRDOH will be responsible for submitting the report to the SHPO.
5. The Monitor shall document all archaeological remains identified during construction activities, except for previously unidentified historically significant findings (refer to B-8 below). The documentation shall include a detailed description of the discovery, context, horizontal and vertical provenience, photos, and a plan drawing. This documentation shall be done within a reasonable amount of time, trying as much as possible, not to impact on the project schedule.
    a. The documentation may require extending the contractor excavations to expose and define the finds. Associated stratigraphy will be documented and representative samples of associated artifactual material will be recovered. For structural remains, construction materials and techniques will be documented. The controlled units may vary in size according to the nature and dimensions of the archaeological find. These will be excavated by strata, cultural or natural, with vertical and horizontal control. When warranted, the removed soil will be sifted through ¼ inch mesh. The recovered artifactual material will be bagged and labeled by specific origin. It shall proceed in accordance with the protocol included in item B-7.
6. ~~Any subsurface feature may be demolished and removed after being documented by the Monitor and approved by the GM. The information recorded will be included in the final report.~~
7. If the identified archaeological remains are considered historically significant– i.e., complex structures, precolonial remains or stratified deposits – the Monitor shall instruct the construction crew to (1) immediately cease work in the vicinity of the discovery, (2) take all reasonable measures to avoid or minimize harm to the property, and (3) notify the PM, CM, and GM. The GM shall immediately notify the SHPO, as per stipulation III.B.1.b. of the PA. The following protocol shall be followed:
    a. The Monitor shall make a preliminary assessment of the finding. The assessment shall include a description of the discovery, location, horizontal and vertical extent (if known), context, photographs, and drawings, as deemed necessary. The assessment shall also include a work plan for implementing a National Register of Historic Places'

eligibility evaluation of the exceptional remains (in other words, an evaluation of significance and integrity).

b. The assessment and NRHP-eligibility evaluation work plan shall be submitted via email to the PM and GM within 24 hours of the discovery. The GM will comment on the work plan within 24 hours of receiving it.
c. The Monitor shall implement the work plan after receiving the GM's authorization to proceed. After completing the fieldwork, the Monitor shall prepare an End of Field Report, summarizing the results. Said report should include an NRHP-eligibility determination. The End of Field Report shall be submitted via email to the PM and GM within 48 hours after completing the fieldwork.
d. The GM shall notify the SHPO of the NRHP-eligibility determination.
    i. If the finding is **not eligible** to the NRHP, the GM shall notify the SHPO and provide supporting documentation. Construction activities may resume under archaeological monitoring unless the SHPO disagrees with the NRHP determination and makes a timely objection within 48 hours of the notification.
    ii. If the finding is **eligible** to the NRHP, the criteria of adverse effect shall be applied. If the project activities do not adversely affect the finding, the GM shall notify the SHPO and provide supporting documentation. Construction activities may resume under archaeological monitoring unless the SHPO makes a timely objection within 48 hours of the notification.
    iii. If the project activities have an **adverse effect** on the NRHP-eligible finding, a Data Recovery will be implemented as a Treatment Measure per Appendix F of the PA. The Monitor shall develop a data recovery plan with a research design consistent with the Secretary of the Interior's Guidelines for Archeological Documentation (http://www.nps.gov/history/locallaw/arch_stnds_7.htm), the Advisory Council on Historic Preservation's (ACHP) recommendations on the recovery of significant information from archaeological sites as updated in 2009, at https://www.achp.gov/protectinghistoricproperties/Section_106_Archaeology_ Guidance and Regulation #8932. The data recovery plan shall be submitted via email to the GM for comments. The GM shall be responsible for submitting the data recovery plan to the SHPO for comments and approval. This treatment measure does not apply to burials or human remains (refer to IV.D of this work plan).

8. If architectural features are found, as far as possible, the finding should be preserved and protected, and every effort should be made to adapt the design of the project and avoid negative impact to the finding.
9. Processing of archaeological artifacts, if any, will be conducted concurrently with the field work. A summary of these activities shall be included in the monthly report. Artifacts shall be curated and processed in accordance with the standards set forth in 36 CFR Part 79 Curation of Federally-Owned and Administered Archaeological Collections.
    a. Artifacts shall be washed and sorted. Materials such as ceramics, lithics, shell, bone, glass, metal, and others, should be subject to general analysis considering aspects such as material, manufacture, style, function, type, variety, use, and others. Due to their nature, some of these materials require specialized analysis such as studies of malacology, zooarchaeology, bioarcheology, among others, which should be carried out by specialists. The classification scheme used in the classification will be chosen

by the archaeologist according to the context, type of material recovered and previous experience. The classification scheme shall be referenced with available bibliographic references.

b. The materials laboratory shall include a quantitative, qualitative, and comparative analysis of all archaeological materials recovered during archaeological monitoring. An inventory of artifacts by category, and a catalog of artifacts by material type shall be prepared.
c. Photographic documentation shall be made of representative artifacts in the collection.
d. If necessary, documentary research will be conducted for analysis and interpretation of artifacts and other finds.
e. Samples from strata or from cultural elements must be properly packaged, labeled and preserved. The data resulting from their analysis must be included in the final report.

10. ~~If any additional construction activities are added or design changes are made after the project has begun, the CM and PM, prior to performing the work, shall inform the GM and the Monitor. The Monitor, in conjunction with GM, shall evaluate these activities and apply the adverse effect criteria. If it is determined that the effect is adverse, the archaeologist will provide recommendations on how to avoid, minimize, or mitigate the adverse effect. These recommendations will be consulted with the SHPO implementation. The SHPO will have 15 days to comment on the recommendations. If no communication is received within that time frame it will be assumed that the SHPO has no objection and concurs with the recommendations outlined.~~
11. If during construction activities a historic property is affected in an unanticipated manner, the CM shall stop work immediately, and inform the PM, GM, and Monitor. The Monitor, in conjunction with GM, shall evaluate the unanticipated effects and apply the adverse effect criteria within no more than 24 hours. If the effect is determined to be adverse, the Monitor and GM will provide recommendations on how to avoid, minimize, or mitigate such adverse effects. The GM shall consult with the SHPO on the recommendations prior to implementation. The SHPO will have 48 hours to comment on the recommendations. If no communication is received within that timeframe, it will be understood that the SHPO has no objection and concurs with the recommendations outlined.

C. After Construction Ends

1. Upon the completion of archaeological monitoring, the PM and GM shall be notified. The estimated date of delivery of the final report shall be indicated in the said notification.
2. The Monitor shall again document the historic properties located within the project's area of potential effects. The condition of the properties should be compared with those documented at the beginning of the project. This documentation shall be included in the final technical report.
3. The Monitor shall prepare an Archaeological Supervision End of Field Report, which shall include the main findings and their location, the methodology used for their excavation and documentation, conclusions on the effectiveness of the archaeological supervision, the integrity and importance of the archaeological resources discovered, meritorious protection aspects and clear recommendations as to the course of action to be followed. It should also include the date of delivery of the Final Report. This report will be delivered to the GM. The GM shall be responsible for submitting it to the SHPO. The report shall be submitted to the

GM no later than two (2) weeks after completing the archaeological monitoring work. The GM shall submit the report to the SHPO no later than one (1) week after receiving it.

4. A Final Archaeological Monitoring Report shall be prepared and submitted by the date stipulated in the End of Field Report. This report shall include a description of the work performed, the construction activities that were archaeologically monitored, and documentation of unexpected finds, if any. It should also include final documentation of the condition of the properties along with a comparison of the final condition of the structures to the initial condition. The report shall comply with Article 10 Section 8 of Regulation #8932, which outlines the content and format it should have.
    a. If the Final Archaeological Monitoring Report cannot be delivered on the established date, an extension of time will be requested from the Council, indicating the reasons why the report cannot be delivered. The request for extension shall be submitted, to the extent possible, fifteen (15) working days prior to the established date. The Council shall reply within fifteen (15) working days, in accordance with the provisions of Article 10 Section 7 of Regulation #8932, setting a final deadline for the delivery of the report. The request for extension of time must be copied to the SHPO.
5. The Principal Investigator will be responsible for retaining his or her original field notes, digital photographs, expert reports, drawings, maps and any other digital photographs, expert reports, drawings, maps, and any other documents associated with the study conducted (including digital files) and shall ensure future reference by other researchers for future reference.

D. Human Remains

If human remains are discovered, the protocol established in Stipulation III.B.1.c. of the PA and IPRC Regulation #8932, must be followed:

1. Stop work immediately.
2. Notify the local law enforcement office and coroner/medical examiner following applicable Commonwealth statute(s).
3. Protect the remains from any harm.
4. The GM shall be responsible for notifying the SHPO within twenty-four (24) hours of identifying human remains.
5. The services of a physical anthropologist or specialist in bioarcheology will be required.

V. PROFESSIONAL QUALIFICATIONS:

The Monitor must meet the minimum Secretary of the Interior Professional Qualifications Standards for Archaeology established in 36CFR Part 61. These are: a graduate degree in archaeology, anthropology, or closely related field, plus at least one (1) year of full-time professional experience or equivalent specialized training in archaeological research, administration, or management; at least four (4) months of supervised field and analytic experience in general Puerto Rican archaeology; the demonstrated ability to carry research to completion; and at least one (1) year of full-time professional experience at a supervisory level in the study of archaeological resources of the pre-Columbian and colonial periods. Please see https://www.nps.gov/history/local-law/arch_stnds_9.htm for more information.

The SOI-qualified archaeologist shall not defer their monitoring responsibilities to any other person who does not meet the minimum professional qualifications. Any additional personnel to intervene in monitoring efforts shall have vast experience in historic archaeology, in working in

evaluation (Phase II), documentation (Phase III), and monitoring projects dealing with colonial period properties.

The Principal Investigator may not transfer his or her duties, obligations, and responsibilities to subordinates or other technicians who are not professionally trained in archaeology. In the case of hiring archaeologists and trained technicians to assist in archaeological monitoring, the Principal Investigator must be present for at least 25 percent of the duration of the fieldwork to supervise them.

VI. CITED REFERENCES:

Advisory Council on Historic Preservation

2009 ACHP recommendations of recovery of significant information from archaeological sites https://www.achp.gov/protectinghistoricproperties/Section_106_Archaeology_Guidance.

Norma Medina Carrillo, Fernando Alvarado Muñoz, Carlos Ferran & Heidi J. Dilan

2024 Puerto Rico 2017 Disaster Recovery, CDBG-DR Program.
City Revitalization Program (City-Rev).
Section 106 - NHPA Effect Determination Form.

National Park Service

"Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines [As Amended and Annotated] Professional Qualification Standards". https://www.nps.gov/history/local-law/arch_stnds_9.htm

"Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines for Archeological Documentation". http://www.cr.nps.gov/local-law/arch_stnds_7.htm

VII. APPENDIX A:

PUERTO RICO 2017 DISASTER RECOVERY, CDBG-DR PROGRAM CITY REVITALIZATION PROGRAM (CITY-REV) Section 106 NHPA Effect Determination	
Project Name:	
Case ID:	City:
Project Coordinates:	

SOI Qualified-Archaeologist:
Archaeologist Assistant:
Date of Monitoring:
Work Hours:

Description of work performed by contractor and supervised by the Monitor:

	YES	NO
Are the project activities conforming to the LIDRS? If not, explain below.	X	☐
Was an archaeological remain documented during the day. If yes, include required information below.	☐	X
Was an exceptional archaeological remain identified during the day? If yes, explain below.	☐	X
Have the construction activities affected a previously unidentified property or a known historic property in an unanticipated manner? If yes, explain below.	☐	X
Has there been a change in the scope of work of the project? If yes, explain below.	☐	X

Puerto Rico 2017 Disaster Recovery, CDBG-DR Program City Revitalization Program (City-Rev) Section 106 NHPA Effect Determination	
Project Name:	
Case ID:	City:
Project Coordinates:	

Site Photos	
Direction of Photo: **Description:**	
Direction of Photo: **Description:**	

APPENDIX B: Include Puerto Rico State Historic Preservation Office (PRSHPO) letters.

GOVERNMENT OF PUERTO RICO
STATE HISTORIC PRESERVATION OFFICE
Executive Director | Carlos A. Rubio Cancela | carubio@prshpo.pr.gov

Wednesday, August 28, 2024

Lauren B Poche

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

SHPO-CF-08-01-24-06 PR-CRP-000845 (Cabo Rojo), Rehabilitación de la Infrastructura Project

Dear Ms. Poche,
Our Office has received and reviewed 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.

After a review of all the documentation, the PRSHPO concurs with your determination that the proposed project will have no adverse effect on historic properties for this undertaking conditioned to archaeological monitoring during ground disturbing activities for the project. An archaeology monitoring work plan must be summited to PRSHPO for its review and concurrence before any works initiates.

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/ OJR

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

April 30, 2024

Arch. Carlos A. Rubio Cancela
Executive Director
Puerto Rico State Historic Preservation Office
Cuartel de Ballajá, Third Floor
San Juan, Puerto Rico 00901

Re: Authorization to Submit Documents for Consultation

Dear Arch. Rubio Cancela,

The U.S. Department of Housing (HUD) approved the allocations of Community Development Block Grant (CDBG-DR) funds on February 9, 2018. It also approved the allocation of Community Development Block Grant Mitigation (CDBG-MIT) funds on January 27, 2020. The purpose of these allocations is to address unsatisfied needs as a result of Hurricanes Irma and Maria in September 2017; and to carry out strategic and high-impact activities to mitigate disaster risks and reduce future losses.

To comply with the environmental requirements established by HUD, the Department of Housing of Puerto Rico (PRDOH) contracted Horne Federal LLC to provide environmental review services, among others, that will support the objectives of the agenda for both CDBG-DR and CDBG -MIT Programs.

To expedite the processes, Horne Federal LLC, is authorized to submit to the State Historic Preservation Officer, documentation of projects related to both the CDBG-DR and CDBG-MIT on behalf of PRDOH.

Cordially,

Aldo A. Rivera Vázquez, PE
Director
Division of Environmental Permitting and Compliance
Office of Disaster Recovery

February 18, 2025

Carlos A. Rubio Cancela
State Historic Preservation Officer
Puerto Rico State Historic Preservation Office
Cuartel de Ballajá (Tercer Piso)
San Juan, PR 00902-3935

Puerto Rico Disaster Recovery, CDBG-DR City Revitalization (City-Rev) Program

Re: SHPO-CF-8-01-24-06 - PR-CRP-000845, - Rehabilitación de la Infrastructura Project, Cabo Rojo, Puerto Rico – Archaeology Monitoring Work Plan Submission

Dear Architect Rubio Cancela,

On behalf of the Puerto Rico Department of Housing (PRDOH), we thank you for your letter dated August 28, 2024, in response to the submission of documentation for PR-CRP-000845, Rehabilitación de la Infrastructura project. The letter stated that after the review of all documentation the PRSHPO concurs with PRDOH's finding that the proposed project will have no adverse effect on historic properties for this undertaking conditioned to archaeological monitoring during ground disturbing activities for the project. An archaeology monitoring work plan must be submitted to PRSHPO for its review and concurrence before any works initiates.

As such, we are submitting the requested Archaeological Monitoring Plan prepared by Archaeologist Victor Oppenheimer Rodriguez. We are requesting your review of the prepared plan and concurrence that the implementation of the plan is appropriate for the undertaking.

Please contact me with any questions or concerns by email at lauren.poche@horne.com or phone at 225-405-7676.

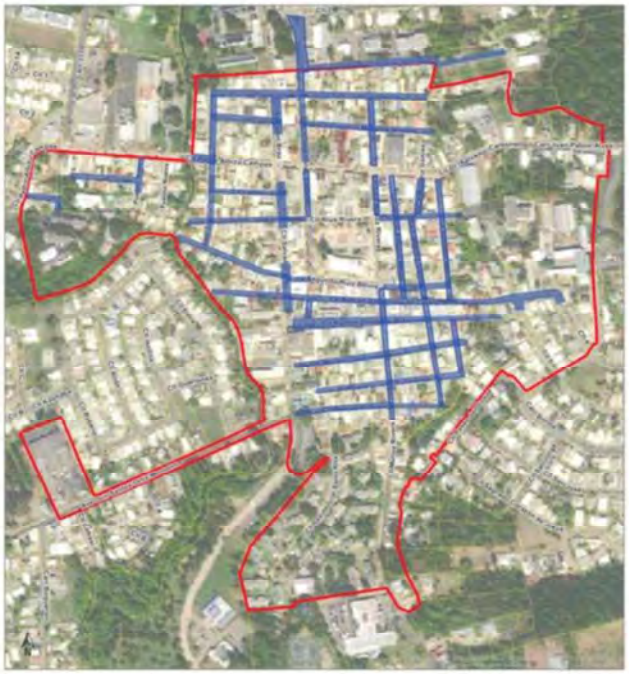
Kindest regards,

Lauren Bair Poche. M.A.
Architectural Historian, EHP Senior Manager
LBP/KPS

Attachments

PUERTO RICO DEPARTMENT OF HOUSING - CDBG-DR PROGRAM **CITY REVITALIZATION PROGRAM (CRP)** **ARCHEOLOGICAL MONITORING PLAN**	
SUBRECIPIENT: Municipality of Cabo Rojo	**PROJECT ID: PR-CRP-000845**
PROJECT NAME: Infrastructure Rehabilitation in the Urban Center of Cabo Rojo, P.R.	**SHPO ID:** SHPO-CF-08-01-24-06
LOCATION: Cabo Rojo Urban Center	
COORDINATES: Approx. 18.087046° N, -67.148151° W	**TPID (CADASTER):** N/A

TYPE OF ACTIVITY: **x SUBSTANTIAL REPAIR (RECONSTRUCTION)** ☐ **NEW CONSTRUCTION**	**CONSTRUCTION DATE**: (AH est.): 1771 **PROPERTY AREA (SIZE):** 61.25 acres
QUALIFIED ARCHEOLOGIST (NAME): Victor Oppenheimer Rodriguez, M.A	**MONTH/YEAR PREPARED**: February, 2025



This document complies with applicable federal and state laws, regulations, and guidelines, and is consistent with the Secretary of the Interior's (SOI) Guidelines for Archeological Documentation, the Advisory Council on Historic Preservation's (ACHP) recommendations on the recovery of significant information from archaeological sites as updated in 2009. The plan was prepared by Victor Oppenheimer Rodriguez, who meets the Professional Qualifications Standards set forth in 36 CFR Part 61.

I. OVERVIEW/PREAMBLE

The Municipality of Cabo Rojo was approved Community Development Block Grant disaster recovery funds financed by the Federal Department of Housing and Urban Development in the aftermath of damages received by the 2017 Hurricanes Irma and Maria. An Agreement was established with the Puerto Rico Department of Housing (PRDOH) for the City Revitalization Program funds as part of the Community Development Block Grant for Disaster Recovery (CDBG-DR) Program. The Municipality of Cabo Rojo was approved to rehabilitate and renovate "Infrastructure Rehabilitation in the Urban Center of Cabo Rojo, PR" and strategically restore it as a resilience area for the community, while preserving the historic development of the space and of the Municipality of Cabo Rojo. The Puerto Rico State Historic Preservation Office (PRSHPO), in a letter dated August 28, 2024, concurred with a decision of No Adverse Effect for this undertaking, conditioned to the implementation of an archaeological monitoring during all ground disturbing activities.

The undertaking will repair damages caused by hurricanes Irma and Maria and involves the revitalization of approximately 6.39 km of streets, sidewalks, lighting, and other infrastructure within the traditional urban center of Cabo Rojo, PR, excluding the area covered by the Ramón E. Betances Main Square project.

The direct APE encompasses the public rights-of-way along approximately 6.39 km of streets and sidewalks within the NRHP-eligible Cabo Rojo Traditional Urban Center. This includes all or portions of 20 municipal streets in the historic core of Cabo Rojo (see Project Description). The direct APE has an approximate total dimension of 2.4 km north-south by 1.2 km east-west. It is bounded by Calle Ríos Rivera to the north, Ave Hostos to the south, Calle Salvador Mestre to the east, and Calle Jose de Diego to the west. The visual APE corresponds with the viewshed of the direct APE and consists of the NRHP-eligible Cabo Rojo Traditional Urban Center. This covers an area approximately 3 km by 2 km, focused on resources adjacent to the direct APE.

Objectives: This archaeological monitoring plan aims to: (1) institute measures to prevent indirect adverse effects to known historical resources; (2) implement the protocol to be followed in archaeological monitoring; (3) establish the procedure to be followed if previously unknown resources are identified; (4) set up the procedure to be followed if there are any unexpected or previously unanticipated adverse effects; (5) detect, assess and keep record of archaeological resources during project development; (6) retrieve as much archaeological information as possible during excavation and construction; (7) to preserve and enhance the value of the archaeological resources located and documented; and (8) if the archaeological resource cannot be preserved in situ, to conserve it through documentation (preservation by record).

Figure 1. Aerial imagery from Google Earth 2022 depicting the project area, direct APE (blue outline), the visual APE (green outline) and the Cabo Rojo Public Plaza (orange outline). **(*2022 Aerial Imagery, from Medina Carrillo et al. 2024: 22*)**

This scope of work is divided into six (6) sections and two (2) appendices. The section following this preamble discusses the proposed construction works. The third section includes a brief description of the historic properties located within the APE and of the archaeological potential of the area. The fourth section provides a detailed description of the archaeological monitoring procedure to be carried out before, during and after the construction works. Section V includes the professional qualifications of the team that will implement this monitoring plan, and the last section includes the references cited. The plan closes with an appendix with a model of a monitoring daily activity sheet (Appendix A) and SHPO letter (Appendix B):

- Overview/Preamble: An introductory statement that outlines the purpose and guiding principles of this document.
- Project Description: The proposed construction activities and scope of work.
- Historic Properties within the APE: A summary of the historic properties and areas of archaeological potential effects (APEs).
- Archaeological Monitoring Procedure: Details of the archaeological monitoring procedure to be executed before, during and after construction.

- Professional Qualifications: An archeologist monitor in compliance with the qualifications of the Secretary of the Interior Standard (SOI).
- Cited References: A list of cited references, including an Appendix (A) with a *Monitoring Daily Activity Shee*t template and Appendix (B) SHPO letter.

II. PROJECT DESCRIPTION:

The information below is taken from the Section 106 NHPA Effect Determination Form completed by Archaeologist Norma Carrillo & Fernando Alvarado in June 2024 (revised in July 2024).

The proposed project involves the revitalization of approximately 6.39 km of streets, sidewalks, lighting, and other infrastructure within the Traditional Urban Center of Cabo Rojo, PR, excluding the area covered by the Ramón E. Betances Main Square project.

- An evaluation of subsoil conditions should be carried out, if applicable.
- Rehabilitation of damaged sidewalk and curb areas, including repair or replacement of existing cobblestones or brick details with equal or similar materials.
- Replacement, repair, or rehabilitation of street light fixtures, poles, and bases. This includes evaluating functionality, replacing damaged poles, installing missing posts, and painting, if necessary.
- Installation of two emblematic signs, one at each end of Calle Pedro Albizu as one enters the urban center.
- Addressing barriers affecting circulation for people with disabilities via ADA improvements, signage, and finishes.

The below-ground disturbance activities include:

- Milling and demolition of damaged asphalt street surfaces to a depth of 2-4 inches.
- Selective demolition and replacement of damaged sidewalks and curbs, involving excavation up to 6 inches deep.
- Installation of new street lighting pole foundations, requiring excavation up to 3 feet deep and 2 feet wide.
- Installation of wayfinding signage footers, requiring excavation of narrow holes up to feet deep.
- Trenching for new wiring with trenches estimated to be 3 feet deep and 2 feet wide.
- Sidewalk and curb ramp repair involving subsurface excavation up to 6 inches deep.
- Utility structure repairs like manholes requiring excavation up to 4 feet deep and 4 feet wide.
- The plans also propose the removal and excavation of between 1 foot (12 inches) to a maximum of 1.33 feet (16 inches) in the street section (concrete) to rebuild it and maintain levels like the existing ones.

The direct APE covers an area approximately 2.4 km from north to south and 1.2 km from east to west. It is bounded by Calle Ríos Rivera to the north, Avenida Hostos to the south, Calle

Salvador Mestre to the east, and Calle José de Diego to the west. The project area includes **20** municipal streets within the Traditional Urban Center, totaling approximately **6.39 km**:

1. **Calle Muñoz Rivera** (North-South)
2. **Calle Manuel F. Rossy** (East-West)
3. **Intersection of PR-103 & PR-308** (North-South)
4. **Calle Pueblo Nuevo (Calle Carbonell)** (East-West)
5. **Calle Ángel Franco** (South-North)
6. **Calle Henna** (West-East)
7. **Calle José de Diego** (East-West)
8. **Calle Baldorioty de Castro** (West-East)
9. **Calle Salvador Mestre** (South-North)
10. **Calle Hostos** (East-West)
11. **Calle Maceo** (East-West)
12. **Calle Máximo Gómez** (South-North)
13. **Calle Labra** (East-West)
14. **Calle Ruíz Belvis** (West-East)
15. **Calle Betances** (West-East)
16. **Calle Mariano Quiñones** (East-West)
17. **Calle Jiménez** (West-East)
18. **Calle Ríos Rivera** (East-West)
19. **Calle Barbosa** (South-North)
20. **Corredor Zolio Santiago**

III. HISTORIC PROPERTIES WITHIN THE APE:

The information below is taken from the Section 106 NHPA Effect Determination Form completed by Archaeologist Norma Carrillo & Fernando Alvarado in June 2024 (revised in July 2024).

Area of Potential Effects

As defined in 36 CFR §800.16(d), the area of potential effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such properties exist.

Based on this definition and the nature and scope of this infrastructure rehabilitation undertaking, the direct APE encompasses the public rights-of-way along approximately 6.39 km of streets and sidewalks within the NRHP-eligible Cabo Rojo Traditional Urban Center. This includes all or portions of 20 municipal streets in the historic core of Cabo Rojo, as listed in the project description.

The direct APE has an approximate total dimension of 2.4 km north-south by 1.2 km east-west. It is bounded by Calle Rios Rivera to the north, Ave Hostos to the south, Calle Salvador Mestre to the east, and Calle Jose de Diego to the west. The visual APE corresponds with the viewshed of the direct APE and consists of the NRHP-eligible Cabo Rojo Traditional Urban

Center. This covers an area approximately 3 km by 2 km, focused on resources adjacent to the direct APE.

Eligible Historic Properties Within the APE

There is only one NRHP-Listed property within the APE.

1. James L.M. Curry Vocational High School - Listed 1988. Located at 18.085925° N, -67.146937° W, on Calle Betances within the project area. The James L.M. Curry Vocational High School (listed 1988), located on Calle Betances, is within the indirect/visual APE.

Field surveys that occurred during the Section 106 preparation process yielded a list of Potentially Eligible Properties.

- Calle Mariano Quiñones - Cluster of early 20th century vernacular residences located within project area.
- Calle Ruiz Belvis - Late 19th century commercial structures located within project area.
- Calle Barbosa - Mix of 19th and early 20th century residences and commercial buildings within project area.
- City Hall – Located at 18.085685, -67.146742. It has an architectural style that incorporates historicism and eclectic, with Hispano-Arab elements (lobed arches) and classical. It was constructed in 1907, with an intervention in 1958.
- Municipal Cemetery Las Delicias/San Martín de Porres – Located at 18.094890, -67.149681. It was constructed between 1813 and 1880 and has several three-story niche structures in brick, with vaults of the same material.
- Bracero Cafeteria – Located at 18.086079, -67.145716. It was constructed around 1900 and is a wooden building with a four-sloped roof, corresponding to the typology of a wooden Creole house, although is for commercial use.
- Pedro F. Corberg School – Located at 18.087529, -67.143609. It was constructed between 1920 and 1936 and features elements of classic and mannerist architecture.
- Dr. Héctor "Jr." Marty Carrillo Multiple Activities and Services Center – Located at 18.088690, -67.144052. It was constructed around 1917 and corresponds to the typology of municipal hospitals from the early part of the 20th century.
- Presbyterian Church of Cabo Rojo – Located at 18.086061, -67.146801. Its foundation dates to 1903, although the building appears to have been remodeled.
- San Miguel Arcángel Parish– Located at -18.086789, -67.146130. The original construction dates to 1785, though it has undergone modifications, especially to the façade and roof, it keeps predominantly classic architectural elements.
- Masonic Lodge Cuna de Betances No. 42 – Located at 18.085745, -67.145884 and birthplace of Ramón E. Betances y Alacán, this building combines classic elements with pointed arches and a reduced barrel vault ceiling.

- Dr. Ramón Emeterio Betánces y Alacán Plaza – Locates at 18.087148, -67.146139. This building contains historic and contemporary sculptural elements, as well as an acoustic shell.
- Lolita Montalvo Cordero Market Plaza – Located at 18.086102, -67.146326. It was built in 1908, with repairs and remodeling in subsequent years.
- Residential Santa Rita de Casia – Located at 18.083062, -67.14619. It was originally consisted by 21 buildings and was occupied in 1954.
- Excelsior Theater – Located at 18.086108, -67.146025. It was originally consisted of a nave with a gabled roof, with a façade suggesting the form of a pediment and pilasters and today functions as a cinema.

General Historic Context & Archaeological Potential

The Traditional Urban Center of Cabo Rojo, Puerto Rico, represents a historically significant landscape shaped by centuries of settlement, trade, and urban development. The direct APE for this project spans 6.39 km, encompassing historic streets and sidewalks that have been integral to the town's growth since its official founding in 1771 as San Miguel Arcángel. The grid pattern of streets, which remains visible today, reflects the town's colonial planning principles, oriented north-south and east-west, around a central plaza that continues to serve as Cabo Rojo's civic and cultural nucleus.

Spanish settlement in the southwestern coast of Puerto Rico began in the early 16th century, initially focused on salt production, a key industry that influenced Cabo Rojo's economic foundations. By the mid-18th century, the area saw an influx of settlers moving inland to raise livestock and establish permanent homesteads. The demand for a local church and administrative center led to the formal founding of Cabo Rojo in 1771, with its early urban growth tied to agriculture and maritime trade. The central plaza and surrounding streets, including those now within the direct APE, were integral to the town's early expansion, with infrastructure like roads, bridges, and mills playing an essential role in sustaining the economy.

The 19th century brought significant expansion with the introduction of cash crops such as coffee, tobacco, rice, and sugarcane, bolstering Cabo Rojo's wealth. This period saw an influx of European and South American immigrants and the establishment of wealthy plantation homes and commercial structures, many of which were located along the streets now included in the direct APE. By the late 19th century, railroads and small industries began reshaping the urban landscape, contributing to Cabo Rojo's industrial and transportation network. This transformation is evident in the Cabo Rojo Railroad Station (CR-02-00006) on No. 4 Barbosa Street, which falls directly within the direct APE. This station, part of the A.R.R. railway system, facilitated the movement of agricultural goods and manufactured products, sustaining the local economy into the early 20th century.

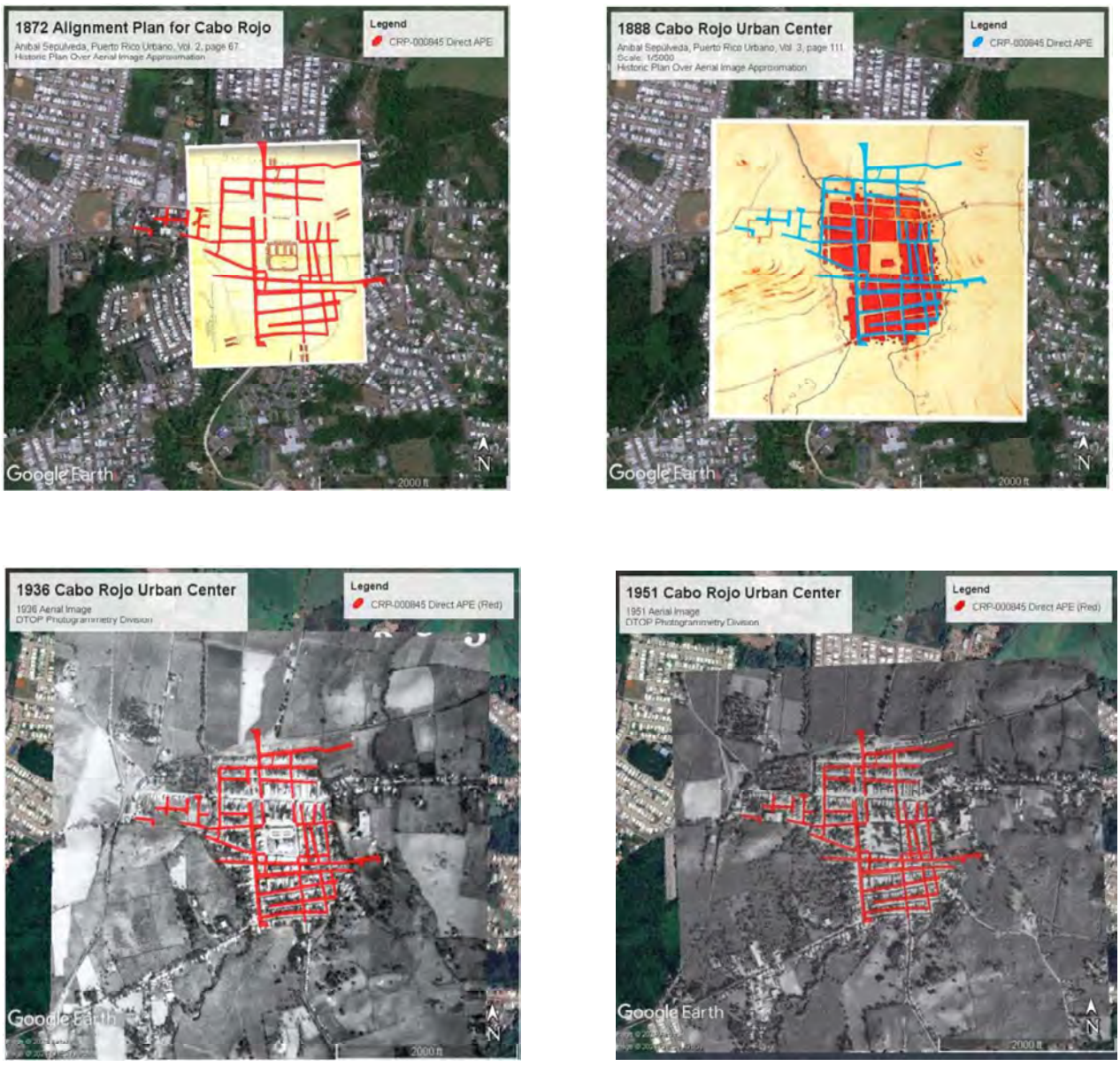


Figure 2. Approximate alignment of historic plans and aerial image overlays highlighting urban continuity. The descriptions are as follows: 1872 Alignment Plan for Cabo Rojo (top-left), 1888 Cabo Rojo Urban Center (top-right), 1936 Cabo Rojo Urban Center (bottom-left), 1951 Cabo Rojo Urban Center (bottom-right). (*Taken from Medina Carrillo et al. 2024: 6-7, 34-35*).

Among the most significant archaeological sites within the direct APE is Garrow Site 19 (CR-02-00005 / CR-118), located at No. 49 Maximo Gomez Street. This site represents the remains of a 19th-century hacienda, demolished in 1986. Archaeological investigations conducted by Garrow & Associates in 1985 revealed 196 ceramic fragments and construction materials, including bricks manufactured by Juan Bautista Buyé, a local brickmaker. The site aligns with

the period of agricultural expansion in the 19th century, when plantation estates played a dominant role in the town's economy. The presence of brick foundations, ceramic materials, and construction debris indicates the possibility of subsurface remains, warranting high sensitivity during any ground disturbances.

The San Miguel Arcángel Church (CR-02-00027), located on the Public Square of Cabo Rojo, provides another layer of historical continuity. Built in 1771, the church and its surrounding streets (including Calle Rios Rivera and Calle Betances) were central to the early colonial settlement pattern. Archaeological investigations at the church (CAT-CR-05-24-05 and CAT-CR-10-36-04) identified historic walls, a buried water cistern, and the original staircase leading to the church entrance. Additionally, evidence suggests that the original cemetery for the town extends east of the church, indicating a moderate to high probability of encountering human remains or associated funerary materials in any subsurface work within this area.

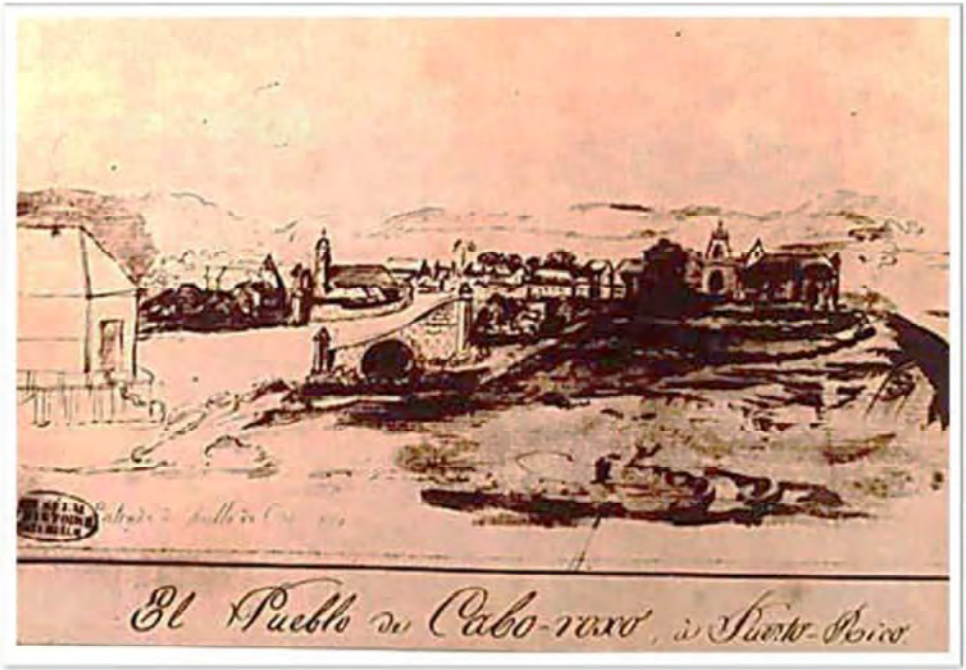


Figure 3. "El Pueblo de Cabo Rojo de Puerto Rico" by Augusto Pleé. It depicts a church, which reassembles the architectural components of the San Miguel Arcángel Church. (*Taken from Medina Carrillo et al. 2024: 4*).

The Carbonell Power Plant (CR-02-00011), another historic property within the direct APE, reflects industrial advancements in Cabo Rojo during the early 20th century, following Puerto Rico's transition to U.S. administration in 1898. As coffee cultivation declined, local industries like power generation and small-scale manufacturing helped sustain economic activity. The James L.M. Curry Vocational High School (NRHP-listed, 1988) on Calle Betances is another example of this shift, representing early 20th-century educational infrastructure that catered to the changing needs of the community. This site will be directly affected by

roadway, sidewalk, and lighting improvements, in which a high sensitivity should be placed during the archaeological monitoring.

Cabo Rojo's railroad infrastructure, developed in the late 19th and early 20th centuries, was crucial for connecting local industries to regional and international markets. Within the indirect APE, archaeological monitoring identified Puente de Ferrocarril #1 (CR-186), a small railroad bridge located 0.07 miles northeast of the project area. Although not directly affected by the proposed undertaking, its proximity emphasizes Cabo Rojo's historical role as a transportation hub. Similarly, the identification of two railroad bridges in the indirect APE during a Phase IA-IB study by Eduardo Questell Rodríguez (CR-97-11-07) suggests that subsurface remnants of transportation infrastructure could exist within the direct APE.

Ground disturbances along Maximo Gomez Street, Barbosa Street, Betances Street, and the Public Square have the potential to expose buried water channels, historic masonry foundations, construction materials, and artifact deposits. Subsurface investigations should particularly focus on areas where 19th-century structures once stood, as well as near sites with documented archaeological discoveries, such as Garrow Site 19 and the San Miguel Arcángel Church.

IV. ARCHAEOLOGICAL MONITORING PROCEDURE

The monitoring activities can be divided into three groups: activities before the project begins, activities during construction, and post-construction activities. Monitoring is limited to activities that entail demolition and excavations. Those construction activities that do not entail excavations or earth movements do not require an archaeological monitor. However, if there are activities with heavy equipment taking place in the vicinity of historic buildings, there should be a monitor present to prevent accidents and indirect impacts accidents and indirect impacts.

A. Before Construction Begins

1. The Construction Manager (CM) will notify the Project Manager (PM), Grant Manager (GM), and Monitor of the proposed activities' start date. The PM is responsible for coordination between the CM and the SOI-qualified archaeologist who will oversee the monitoring (Monitor). The GM shall notify the State Historic Preservation Office (SHPO) of the construction start date and the archaeology company charged with implementing this Plan.
2. Before any demolition or construction begins, the PM, CM, GM, and Monitor will have a kickoff meeting to discuss the procedure for archaeological monitoring, including the coordination protocol between the Monitor and the Contractor. The Monitor will provide an orientation on the area's cultural resources and potential resources and their proper treatment. The Monitor will also explain which project activities require archaeological monitoring.
3. The CM, PM, and construction crew will complete and sign a statement outlining the activities that may not be performed without the Monitor's presence, demonstrating their understanding and commitment to following the archaeological monitoring procedures.

4. The Monitor will document the historic properties (NRHP-listed and eligible) located within the project's area of potential effects by means of verbal descriptions and photographs. This documentation shall be included as an appendix to the first weekly report.

B. During Demolition and Construction

1. The Monitor shall be in the field during all project activities involving demolition and ground disturbance; access and clear sightlines to all demolition and excavation activities and debris removal will be provided to the Monitor. In the event of simultaneous excavations in different areas of the project, an archaeologist should be assigned to each area.
2. The Monitor shall provide instructions directly to the construction field personnel concerning how to proceed when there is a potential to impact an archaeological resource. The construction field personnel will abide by these requests: excavate slowly, stop the excavation work to evaluate a finding, etc.
3. The Monitor shall keep a record of monitored activities. The Monitor shall fill out the Daily Record of Activities Form (see **Error! Reference source not found.**). These Forms will be attached to the final report as an appendix. These forms should be sent weekly to the GM for review.
4. The reports will be prepared, including photos of the area of interest. These shall be emailed to the GM during the following week in which the monitoring was conducted. The PRDOH or the GM on behalf of PRDOH will be responsible for submitting the report to the SHPO.
5. The Monitor shall document all archaeological remains identified during construction activities, except for previously unidentified historically significant findings (refer to B-8 below). The documentation shall include a detailed description of the discovery, context, horizontal and vertical provenience, photos, and a plan drawing. This documentation shall be done within a reasonable amount of time, trying as much as possible, not to impact on the project schedule.
    a. The documentation may require extending the contractor excavations to expose and define the finds. Associated stratigraphy will be documented and representative samples of associated artifactual material will be recovered. For structural remains, construction materials and techniques will be documented. The controlled units may vary in size according to the nature and dimensions of the archaeological find. These will be excavated by strata, cultural or natural, with vertical and horizontal control. When warranted, the removed soil will be sifted through ¼ inch mesh. The recovered artifactual material will be bagged and labeled by specific origin. It shall proceed in accordance with the protocol included in item B-7.
6. Any subsurface feature may be demolished and removed after being documented by the Monitor and approved by the GM. The information recorded will be included in the final report.
7. If the identified archaeological remains are considered historically significant– i.e., complex structures, precolonial remains or stratified deposits – the Monitor shall instruct the construction crew to (1) immediately cease work in the vicinity of the discovery, (2) take all reasonable measures to avoid or minimize harm to the property, and (3) notify the PM, CM, and GM. The GM shall immediately notify the SHPO, as per stipulation III.B.1.b. of the PA. The following protocol shall be followed:
    a. The Monitor shall make a preliminary assessment of the finding. The assessment shall include a description of the discovery, location, horizontal and vertical extent (if known), context, photographs, and drawings, as deemed necessary. The assessment shall also include a work plan for implementing a National Register of Historic Places'

eligibility evaluation of the exceptional remains (in other words, an evaluation of significance and integrity).

b. The assessment and NRHP-eligibility evaluation work plan shall be submitted via email to the PM and GM within 24 hours of the discovery. The GM will comment on the work plan within 24 hours of receiving it.
c. The Monitor shall implement the work plan after receiving the GM's authorization to proceed. After completing the fieldwork, the Monitor shall prepare an End of Field Report, summarizing the results. Said report should include an NRHP-eligibility determination. The End of Field Report shall be submitted via email to the PM and GM within 48 hours after completing the fieldwork.
d. The GM shall notify the SHPO of the NRHP-eligibility determination.
    i. If the finding is **not eligible** to the NRHP, the GM shall notify the SHPO and provide supporting documentation. Construction activities may resume under archaeological monitoring unless the SHPO disagrees with the NRHP determination and makes a timely objection within 48 hours of the notification.
    ii. If the finding is **eligible** to the NRHP, the criteria of adverse effect shall be applied. If the project activities do not adversely affect the finding, the GM shall notify the SHPO and provide supporting documentation. Construction activities may resume under archaeological monitoring unless the SHPO makes a timely objection within 48 hours of the notification.
    iii. If the project activities have an **adverse effect** on the NRHP-eligible finding, a Data Recovery will be implemented as a Treatment Measure per Appendix F of the PA. The Monitor shall develop a data recovery plan with a research design consistent with the Secretary of the Interior's Guidelines for Archeological Documentation (http://www.nps.gov/history/locallaw/arch_stnds_7.htm), the Advisory Council on Historic Preservation's (ACHP) recommendations on the recovery of significant information from archaeological sites as updated in 2009, at https://www.achp.gov/protectinghistoricproperties/Section_106_Archaeology_ Guidance and Regulation #8932. The data recovery plan shall be submitted via email to the GM for comments. The GM shall be responsible for submitting the data recovery plan to the SHPO for comments and approval. This treatment measure does not apply to burials or human remains (refer to IV.D of this work plan).

8. If architectural features are found, as far as possible, the finding should be preserved and protected, and every effort should be made to adapt the design of the project and avoid negative impact to the finding.
9. Processing of archaeological artifacts, if any, will be conducted concurrently with the field work. A summary of these activities shall be included in the monthly report. Artifacts shall be curated and processed in accordance with the standards set forth in 36 CFR Part 79 Curation of Federally-Owned and Administered Archaeological Collections.
    a. Artifacts shall be washed and sorted. Materials such as ceramics, lithics, shell, bone, glass, metal, and others, should be subject to general analysis considering aspects such as material, manufacture, style, function, type, variety, use, and others. Due to their nature, some of these materials require specialized analysis such as studies of malacology, zooarchaeology, bioarcheology, among others, which should be carried out by specialists. The classification scheme used in the classification will be chosen

by the archaeologist according to the context, type of material recovered and previous experience. The classification scheme shall be referenced with available bibliographic references.

b. The materials laboratory shall include a quantitative, qualitative, and comparative analysis of all archaeological materials recovered during archaeological monitoring. An inventory of artifacts by category, and a catalog of artifacts by material type shall be prepared.
c. Photographic documentation shall be made of representative artifacts in the collection.
d. If necessary, documentary research will be conducted for analysis and interpretation of artifacts and other finds.
e. Samples from strata or from cultural elements must be properly packaged, labeled and preserved. The data resulting from their analysis must be included in the final report.

10. If any additional construction activities are added or design changes are made after the project has begun, the CM and PM, prior to performing the work, shall inform the GM and the Monitor. The Monitor, in conjunction with GM, shall evaluate these activities and apply the adverse effect criteria. If it is determined that the effect is adverse, the archaeologist will provide recommendations on how to avoid, minimize, or mitigate the adverse effect. These recommendations will be consulted with the SHPO implementation. The SHPO will have 15 days to comment on the recommendations. If no communication is received within that time frame it will be assumed that the SHPO has no objection and concurs with the recommendations outlined.
11. If during construction activities a historic property is affected in an unanticipated manner, the CM shall stop work immediately, and inform the PM, GM, and Monitor. The Monitor, in conjunction with GM, shall evaluate the unanticipated effects and apply the adverse effect criteria within no more than 24 hours. If the effect is determined to be adverse, the Monitor and GM will provide recommendations on how to avoid, minimize, or mitigate such adverse effects. The GM shall consult with the SHPO on the recommendations prior to implementation. The SHPO will have 48 hours to comment on the recommendations. If no communication is received within that timeframe, it will be understood that the SHPO has no objection and concurs with the recommendations outlined.

C. After Construction Ends

1. Upon the completion of archaeological monitoring, the PM and GM shall be notified. The estimated date of delivery of the final report shall be indicated in the said notification.
2. The Monitor shall again document the historic properties located within the project's area of potential effects. The condition of the properties should be compared with those documented at the beginning of the project. This documentation shall be included in the final technical report.
3. The Monitor shall prepare an Archaeological Supervision End of Field Report, which shall include the main findings and their location, the methodology used for their excavation and documentation, conclusions on the effectiveness of the archaeological supervision, the integrity and importance of the archaeological resources discovered, meritorious protection aspects and clear recommendations as to the course of action to be followed. It should also include the date of delivery of the Final Report. This report will be delivered to the GM. The GM shall be responsible for submitting it to the SHPO. The report shall be submitted to the

GM no later than two (2) weeks after completing the archaeological monitoring work. The GM shall submit the report to the SHPO no later than one (1) week after receiving it.

4. A Final Archaeological Monitoring Report shall be prepared and submitted by the date stipulated in the End of Field Report. This report shall include a description of the work performed, the construction activities that were archaeologically monitored, and documentation of unexpected finds, if any. It should also include final documentation of the condition of the properties along with a comparison of the final condition of the structures to the initial condition. The report shall comply with Article 10 Section 8 of Regulation #8932, which outlines the content and format it should have.
    a. If the Final Archaeological Monitoring Report cannot be delivered on the established date, an extension of time will be requested from the Council, indicating the reasons why the report cannot be delivered. The request for extension shall be submitted, to the extent possible, fifteen (15) working days prior to the established date. The Council shall reply within fifteen (15) working days, in accordance with the provisions of Article 10 Section 7 of Regulation #8932, setting a final deadline for the delivery of the report. The request for extension of time must be copied to the SHPO.
5. The Principal Investigator will be responsible for retaining his or her original field notes, digital photographs, expert reports, drawings, maps and any other digital photographs, expert reports, drawings, maps, and any other documents associated with the study conducted (including digital files) and shall ensure future reference by other researchers for future reference.

D. Human Remains

If human remains are discovered, the protocol established in Stipulation III.B.1.c. of the PA and IPRC Regulation #8932, must be followed:

1. Stop work immediately.
2. Notify the local law enforcement office and coroner/medical examiner following applicable Commonwealth statute(s).
3. Protect the remains from any harm.
4. The GM shall be responsible for notifying the SHPO within twenty-four (24) hours of identifying human remains.
5. The services of a physical anthropologist or specialist in bioarcheology will be required.

V. PROFESSIONAL QUALIFICATIONS:

The Monitor must meet the minimum Secretary of the Interior Professional Qualifications Standards for Archaeology established in 36CFR Part 61. These are: a graduate degree in archaeology, anthropology, or closely related field, plus at least one (1) year of full-time professional experience or equivalent specialized training in archaeological research, administration, or management; at least four (4) months of supervised field and analytic experience in general Puerto Rican archaeology; the demonstrated ability to carry research to completion; and at least one (1) year of full-time professional experience at a supervisory level in the study of archaeological resources of the pre-Columbian and colonial periods. Please see https://www.nps.gov/history/local-law/arch_stnds_9.htm for more information.

The SOI-qualified archaeologist shall not defer their monitoring responsibilities to any other person who does not meet the minimum professional qualifications. Any additional personnel to intervene in monitoring efforts shall have vast experience in historic archaeology, in working in

evaluation (Phase II), documentation (Phase III), and monitoring projects dealing with colonial period properties.

The Principal Investigator may not transfer his or her duties, obligations, and responsibilities to subordinates or other technicians who are not professionally trained in archaeology. In the case of hiring archaeologists and trained technicians to assist in archaeological monitoring, the Principal Investigator must be present for at least 25 percent of the duration of the fieldwork to supervise them.

VI. CITED REFERENCES:

Advisory Council on Historic Preservation

2009 ACHP recommendations of recovery of significant information from archaeological sites https://www.achp.gov/protectinghistoricproperties/Section_106_Archaeology_Guidance.

Norma Medina Carrillo, Fernando Alvarado Muñoz, Carlos Ferran & Heidi J. Dilan

2024 Puerto Rico 2017 Disaster Recovery, CDBG-DR Program.
City Revitalization Program (City-Rev).
Section 106 - NHPA Effect Determination Form.

National Park Service

"Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines [As Amended and Annotated] Professional Qualification Standards". https://www.nps.gov/history/local-law/arch_stnds_9.htm

"Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines for Archeological Documentation". http://www.cr.nps.gov/local-law/arch_stnds_7.htm

VII. APPENDIX A:

PUERTO RICO 2017 DISASTER RECOVERY, CDBG-DR PROGRAM CITY REVITALIZATION PROGRAM (CITY-REV) Section 106 NHPA Effect Determination	
Project Name:	
Case ID:	City:
Project Coordinates:	

SOI Qualified-Archaeologist:
Archaeologist Assistant:
Date of Monitoring:
Work Hours:

Description of work performed by contractor and supervised by the Monitor:

	YES	NO
Are the project activities conforming to the LIDRS? If not, explain below.	X	☐
Was an archaeological remain documented during the day. If yes, include required information below.	☐	X
Was an exceptional archaeological remain identified during the day? If yes, explain below.	☐	X
Have the construction activities affected a previously unidentified property or a known historic property in an unanticipated manner? If yes, explain below.	☐	X
Has there been a change in the scope of work of the project? If yes, explain below.	☐	X

Puerto Rico 2017 Disaster Recovery, CDBG-DR Program City Revitalization Program (City-Rev) Section 106 NHPA Effect Determination	
Project Name:	
Case ID:	City:
Project Coordinates:	

Site Photos	
Direction of Photo: **Description:**	
Direction of Photo: **Description:**	

PR-CRP-000845

Rehabilitación de la Infrastructura del Centro Urbano Project

Cabo Rojo, Puerto Rico

Section 106 Effect Determination Form

GOVERNMENT OF PUERTO RICO
STATE HISTORIC PRESERVATION OFFICE
Executive Director | Carlos A. Rubio Cancela | carubio@prshpo.pr.gov

Wednesday, August 28, 2024

Lauren B Poche

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

SHPO-CF-08-01-24-06 PR-CRP-000845 (Cabo Rojo), Rehabilitación de la Infrastructura Project

Dear Ms. Poche,
Our Office has received and reviewed 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.

After a review of all the documentation, the PRSHPO concurs with your determination that the proposed project will have no adverse effect on historic properties for this undertaking conditioned to archaeological monitoring during ground disturbing activities for the project. An archaeology monitoring work plan must be summited to PRSHPO for its review and concurrence before any works initiates.

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/ OJR

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

April 30, 2024

Arch. Carlos A. Rubio Cancela
Executive Director
Puerto Rico State Historic Preservation Office
Cuartel de Ballajá, Third Floor
San Juan, Puerto Rico 00901

Re: Authorization to Submit Documents for Consultation

Dear Arch. Rubio Cancela,

The U.S. Department of Housing (HUD) approved the allocations of Community Development Block Grant (CDBG-DR) funds on February 9, 2018. It also approved the allocation of Community Development Block Grant Mitigation (CDBG-MIT) funds on January 27, 2020. The purpose of these allocations is to address unsatisfied needs as a result of Hurricanes Irma and Maria in September 2017; and to carry out strategic and high-impact activities to mitigate disaster risks and reduce future losses.

To comply with the environmental requirements established by HUD, the Department of Housing of Puerto Rico (PRDOH) contracted Horne Federal LLC to provide environmental review services, among others, that will support the objectives of the agenda for both CDBG-DR and CDBG -MIT Programs.

To expedite the processes, Horne Federal LLC, is authorized to submit to the State Historic Preservation Officer, documentation of projects related to both the CDBG-DR and CDBG-MIT on behalf of PRDOH.

Cordially,

Aldo A. Rivera Vázquez, PE
Director
Division of Environmental Permitting and Compliance
Office of Disaster Recovery

August 1, 2024

Carlos A. Rubio Cancela
State Historic Preservation Officer
Puerto Rico State Historic Preservation Office
Cuartel de Ballajá (Tercer Piso)
San Juan, PR 00902-3935

Puerto Rico Disaster Recovery, CDBG-DR City Revitalization (City-Rev) Program

Section 106 NHPA Effect Determination Submittal for PR-CRP-000845, Rehabilitación de la Infrastructura del Centro Urbano Project, Cabo Rojo, Puerto Rico – *No Adverse Effect Conditioned*

Dear Architect Rubio Cancela,

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 (PRDOH) aims to lead a comprehensive and transparent recovery for the benefit of Puerto Rico residents. To faithfully comply with HUD's environmental requirements, the Puerto Rico Department of Housing contracted Horne Federal, LLC (HORNE) to provide environmental records review services that will support the Department's objectives Puerto Rico Housing (PRDOH) for CDBG-DR.

On behalf of PRDOH, we are submitting documentation for the proposed Rehabilitación de la Infrastructura del Centro Urbano Project. The Municipality of Cabo Rojo is proposing the revitalization of streets, sidewalks and curbing, lighting elements and associated electrical work, utility repairs such as mainholes addition of ADA compliance, and the installation of two emblematic signs at either end of Calle Pedro Albiz as one enters the urban center. These activities are within the National Register of Historic Places eligible Cabo Rojo Traditional Urban Center. The full scope of the project is described in the submitted documentation, which includes mapping, photographs, and the 100% construction plans.

Based on the provided documentation, the Program requests a concurrence with a determination that **no adverse effect** to historic properties is appropriate for this undertaking, conditioned to archaeological monitoring for all ground disturbing activities. An archaeological monitoring plan will be prepared and submitted to the PRSHPO for review and approval of its appropriateness. Additionally, character defining features of adjacent historic buildings will be protected from damage during construction.

Please contact me with any questions or concerns by email at lauren.poche@horne.com or phone at 225-405-7676.

Kindest regards,

Lauren Bair Poche. M.A.
Architectural Historian, EHP Senior Manager
Attachments

Project Location: Traditional urban center of Cabo Rojo, PR	
Project Coordinates: Approx. 18.087046° N, -67.148151° W	
TPID (Número de Catastro)**:** N/A	
Type of Undertaking: ☐ Substantial Repair ☒ New Construction	
Construction Date (AH est.): 1771	**Property Size** (acres)**:** 61.25 acres

SOI-Qualified Architect/Architectural Historian: Carlos Ferran, Heidi J. Dilan
Date Reviewed: 9/19/2023; rev: 12/28/2023, 4/24/2024, 06/12/2024, 07/02/2024
SOI-Qualified Archaeologist: Norma Medina Carrillo, Fernando Alvarado Muñoz
Date Reviewed: 08/31/2023, 12/22/2023 (rev.), 02/05/2024 (rev.), 02/28/2024 (rev.), 03/21/2024 (rev.), 04/16/2024 (rev.), 05/24/2024 (rev.), 06/12/2024 (rev.), 07/10/2024

In compliance with Section 106 of the National Historic Preservation Act (NHPA), the Program is responsible for identifying historic properties listed in the NRHP and any properties not listed that would be considered eligible for listing that are located within the geographic area of potential effects (APE) of the proposed project and assessing the potential effects of its undertakings on these historic properties.

Project Description (Undertaking)

The proposed project involves the revitalization of approximately 6.39 km of streets, sidewalks, lighting, and other infrastructure within the traditional urban center of Cabo Rojo, PR, excluding the area covered by the Ramón E. Betances Main Square project.

The scope of work includes:

- Rehabilitation of damaged street surfaces using materials equal or similar to existing. An evaluation of subsoil conditions should be carried out, if applicable.
- Rehabilitation of damaged sidewalk and curb areas, including repair or replacement of existing cobblestones or brick details with equal or similar materials.
- Replacement, repair, or rehabilitation of street light fixtures, poles, and bases. This includes evaluating functionality, replacing damaged poles, installing missing posts, and painting, if necessary.
- Installation of two emblematic signs, one at each end of Calle Pedro Albiz as one enters the urban center.
- Addressing barriers affecting circulation for people with disabilities via ADA improvements, signage, and finishes.

Proposed construction activities include:

- Milling and demolition of damaged asphalt street surfaces to a depth of 2-4 inches.
- Selective demolition and replacement of damaged sidewalks and curbs, involving excavation up to 6 inches deep.
- Installation of new street lighting pole foundations, requiring excavation up to 3 feet deep and 2 feet wide.

- Installation of wayfinding signage footers, requiring excavation of narrow holes up to 2 feet deep.
- Trenching for new wiring with trenches estimated to be 3 feet deep and 2 feet wide.
- Sidewalk and curb ramp repair involving subsurface excavation up to 6 inches deep.
- Utility structure repairs like manholes requiring excavation up to 4 feet deep and 4 feet wide.
- The plans also propose the removal and excavation of between 1 foot (12 inches) to a maximum of 1.33 feet (16 inches) in the street section (concrete) to rebuild it and maintain levels similar to the existing ones.

The municipal streets included in the project area encompass approximately 6.39 km and include 20 streets within the traditional Cabo Rojo urban core.
Municipal streets included in the project: 1. Muñoz Rivera Street– North to South 2. Manuel F. Rossy Street– East to West 3. 103 Street intersection 308 Street- North to South 4. Pueblo Nuevo Street (Carbonell Street)– East to west 5. Angel Franco Street– South to North 6. Henna Street– West to East 7. José de Diego Street– East to West 8. Baldorioty de Castro Street– West to East 9. Salvador Mestre Street– South to North 10. Hostos Street– East to West 11. Maceo Street– East to West 12. Maximo Gómez Street– South to North 13. Labra Street– East to West 14. Ruíz Belvis Street– West to East 15. Betances Street– West to East 16. Mariano Quiñones Street– East to west 17. Jiménez Street- West to East 18. Ríos Rivera Street– East to West 19. Barbosa Street– South to North 20. Zolio Santiago Corridor.

Area of Potential Effects

As defined in 36 CFR §800.16(d), the area of potential effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such properties exist.

Based on this definition and the nature and scope of this infrastructure rehabilitation undertaking, the direct APE encompasses the public rights-of-way along approximately 6.39 km of streets and sidewalks within the NRHP-eligible Cabo Rojo Traditional Urban Center. This includes all or portions of 20 municipal streets in the historic core of Cabo Rojo, as listed in the project description.

The direct APE has an approximate total dimension of 2.4 km north-south by 1.2 km east-west. It is bounded by Calle Rius Rivera to the north, Ave Hostos to the south, Calle Salvador Mestre to the east, and Calle Jose de Diego to the west. The visual APE corresponds with the viewshed of the direct APE and consists of the NRHP-eligible Cabo Rojo Traditional Urban Center. This covers an area approximately 3 km by 2 km, focused on resources adjacent to the direct APE.

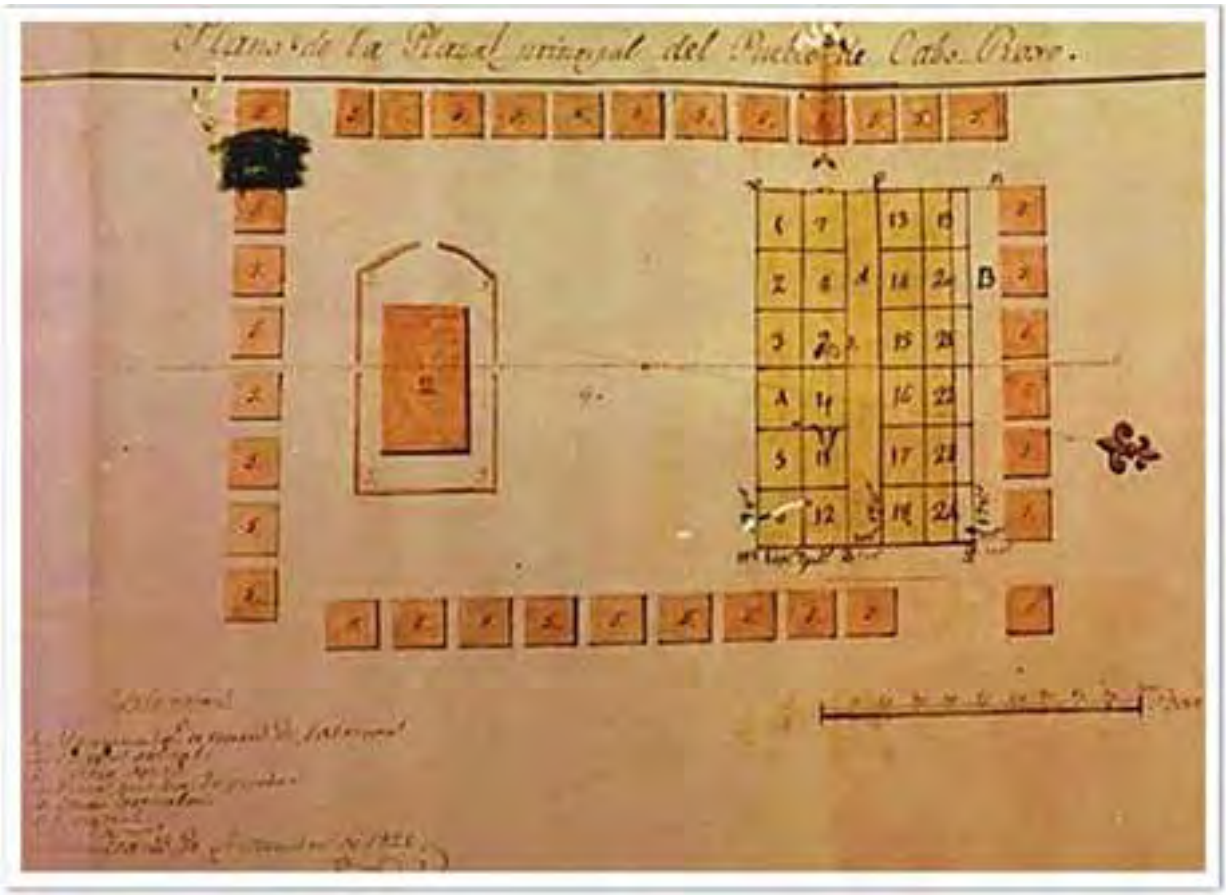
Subsurface impacts in isolated locations are anticipated up to 4 feet deep based on the project description.

Identification of Historic Properties – General Historic Context

The project area falls within the traditional urban core of Cabo Rojo, Puerto Rico. Initial Spanish settlement of the southwestern coast began in the early 16th century, focused on salt production. By the mid-18th century, residents from neighboring areas moved inward to raise livestock. Seeking their own church, settlers petitioned the governor to establish a separate town.

Cabo Rojo was officially founded in 1771 under the name San Miguel Arcángel. The new settlement formed around a central plaza and grid of streets oriented north-south and east-west (Figure 1). Early growth was tied to agriculture and maritime trade, though hampered by raids from British privateers based on nearby islands. Population slowly increased through the late 18th century.

Figure 1: Map of the Main Square of the town of Cabo Rojo, 1821.



Expansion accelerated in the 19th century with the cultivation of coffee, tobacco, rice and sugarcane. Immigrants from Europe and South America swelled the population. Historical documents note the growth of infrastructure like bridges, roads, and mills. Wealthy plantation owners erected urban residences, while more modest vernacular homes occupied side streets. Figure 2 showcases the vista of the urban center as seen by naturalist Augusto Pleé. Additionally, a map from the period depicts an orderly grid of streets surrounding the main plaza. Figure 3 presents an overlay of that map over current aerial image with the direct ape highlighted in red.

Figure 2: Pueblo de Cabo Rojo por Augusto Pleé, 1821

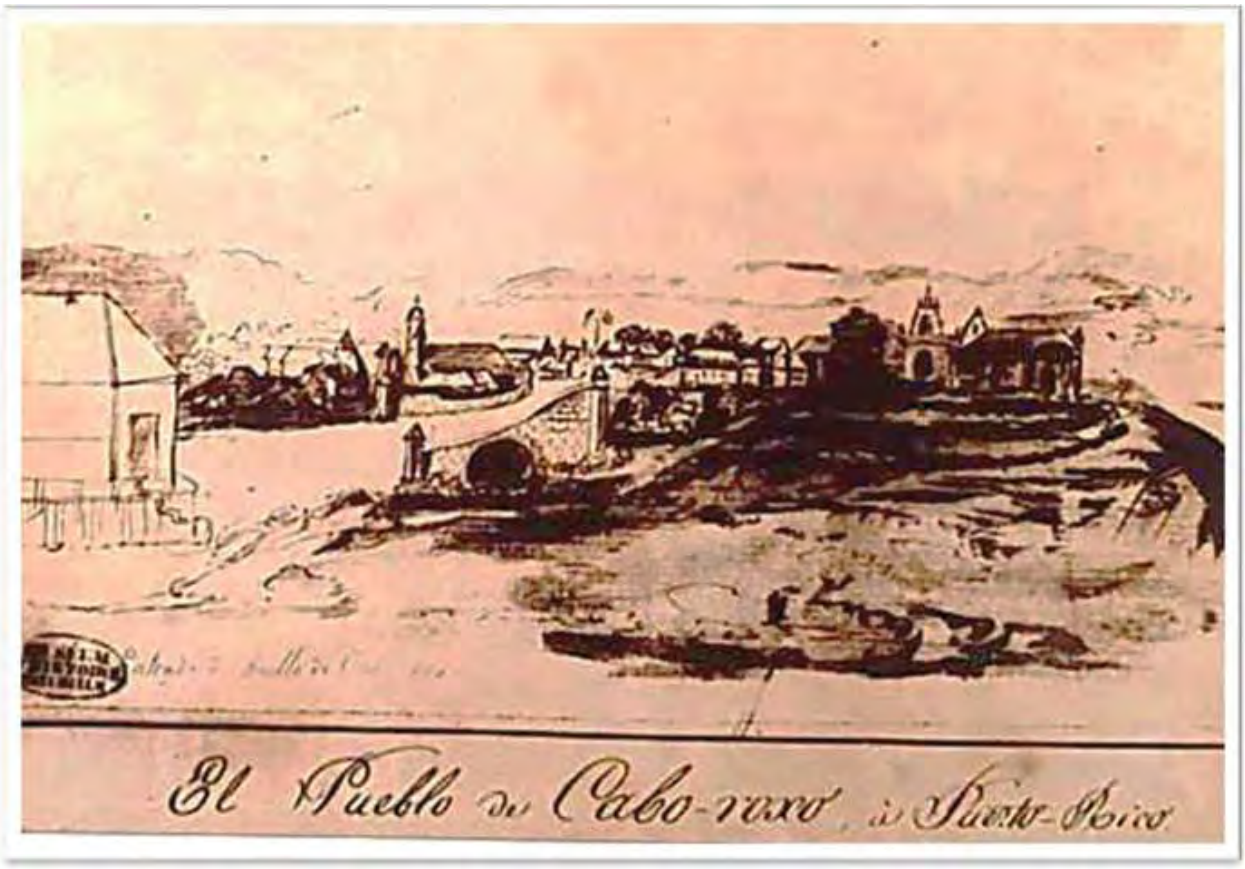


Figure 3: Town of Cabo Rojo 1872 by Enrique Berrocal Image Overlay Approximation.

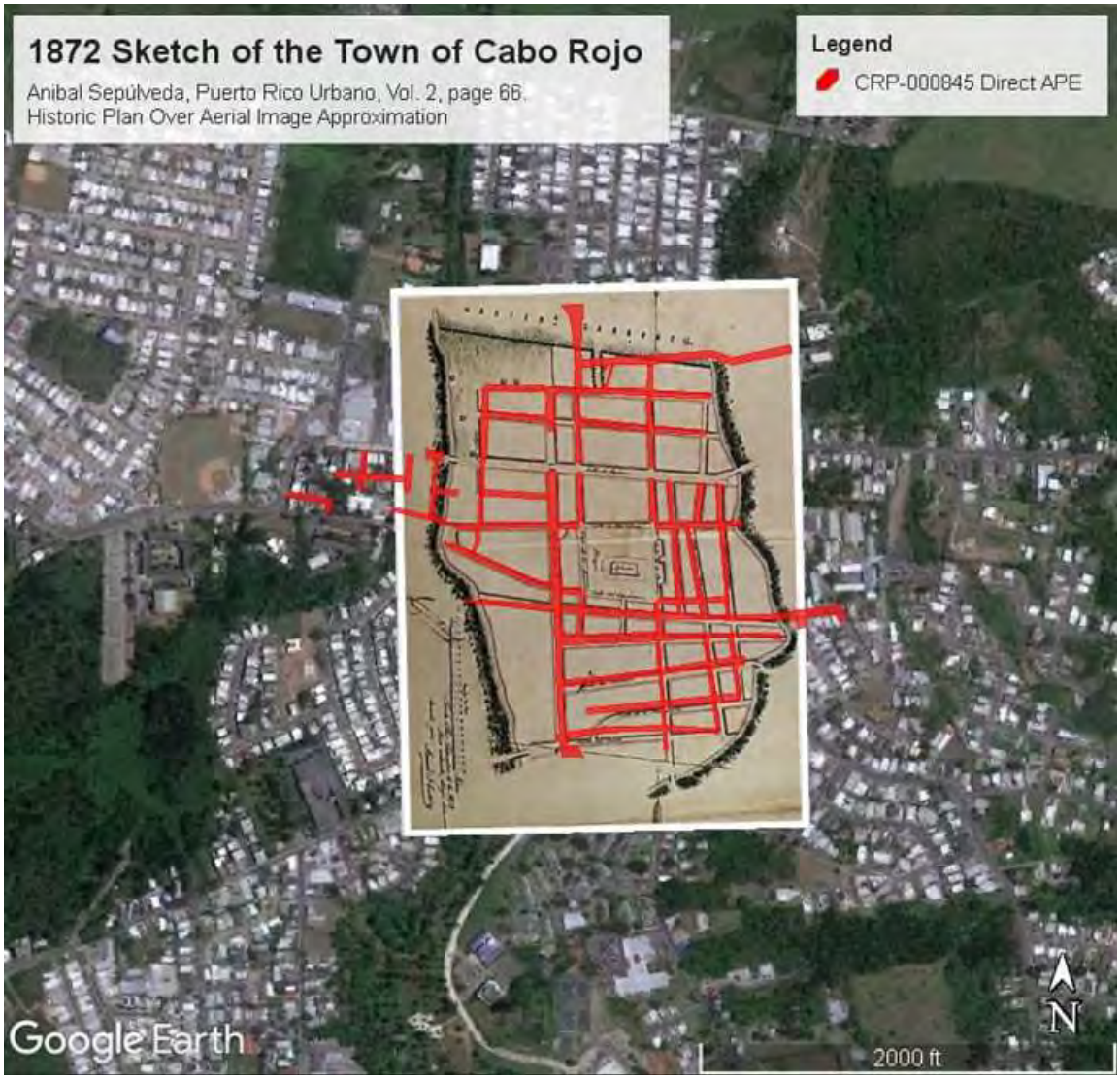
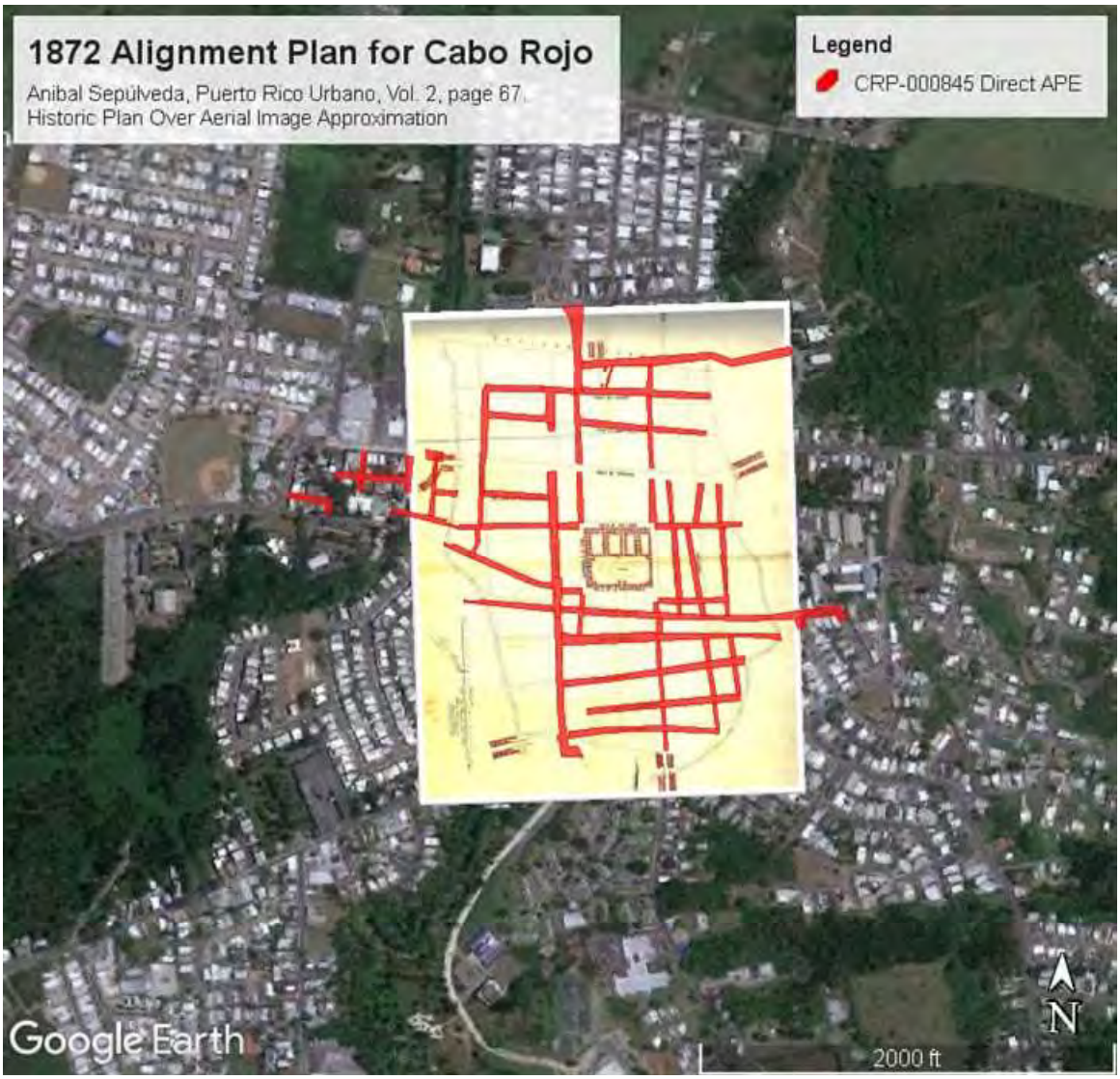


Figure 4: Alignment Plan for the Urban Center 1872 Image Overlay Approximation.



After the U.S. occupation of Puerto Rico in 1898, coffee cultivation declined but had manufacturing and small factories sustained the local economy into the early 20th century. Photographs show unpaved streets and mostly one-story masonry or wood buildings (Figure 4). While the population grew, the town remained largely contained by rivers on the east and west.

Analysis of aerial photos and topographic maps indicates that Cabo Rojo's expansion

outside its historic core accelerated in the mid-late 20th century (Figure 5-7). Modern development filled areas east and west of the original settlement. However, the alignment of streets in the project area retains the early town grid dating to the 18th century foundation. Numerous buildings also reflect architectural styles popular in the 19th and early 20th centuries based on field surveys.

Figure 5: Cabo Rojo Urban Center in 1888. S – 1/5000, Image Overlay Approximation

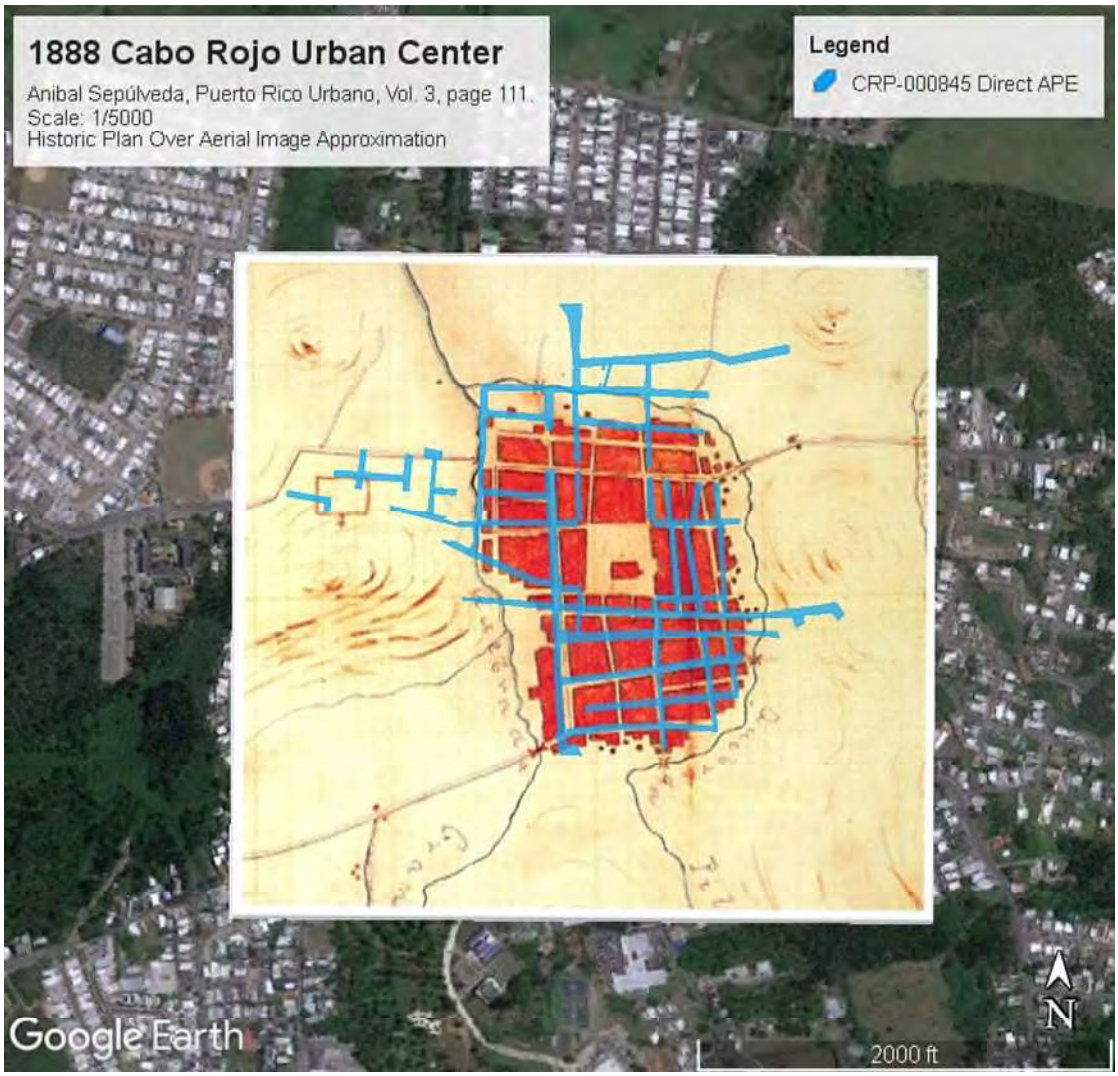


Figure 6: Cabo Rojo Urban Center in 1936, Image Overlay Approximation

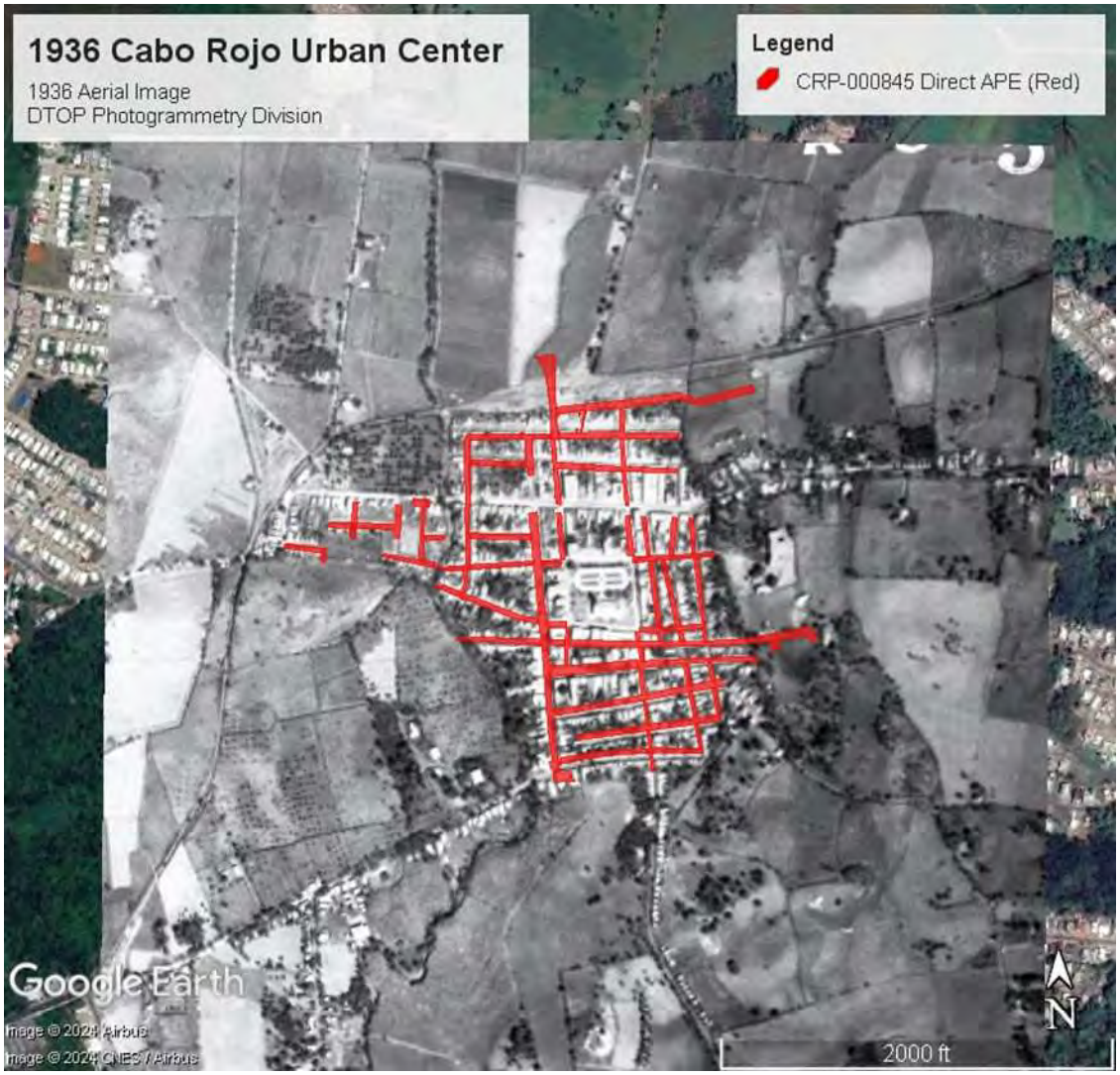
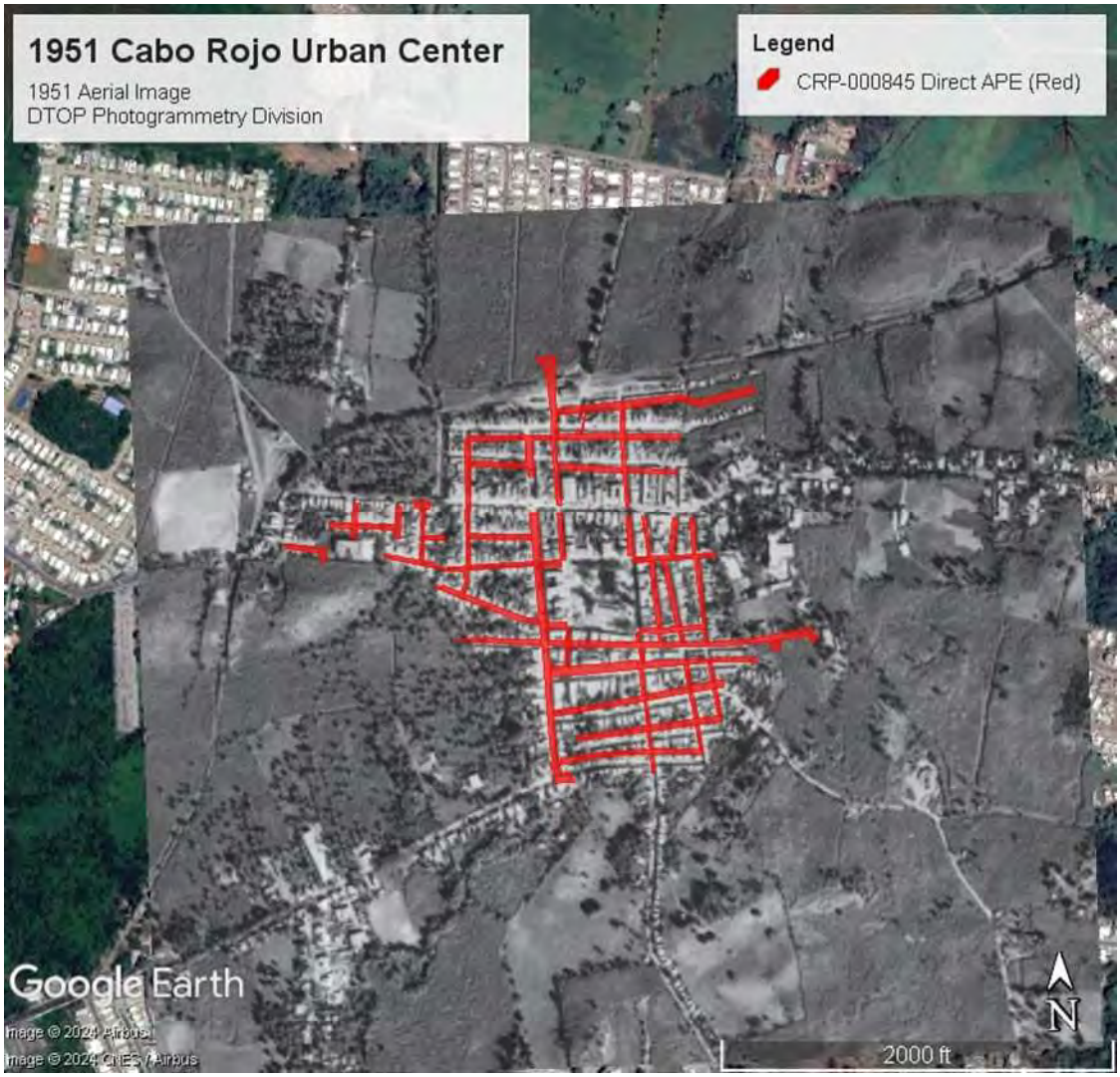


Figure 7: Cabo Rojo Urban Center in 1951, Image Overlay Approximation



Identification of Historic Properties – Archaeology

Existing information on previously identified historic properties has been reviewed to determine if any such properties are located within the APE of this undertaking. The review of this existing information, by a Program contracted Historic Preservation Specialist meeting the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61), shows that the project area has high potential to identify historical structures in the subsoil, as water channels, drains and, historical deposits.

From the late nineteenth century and during the twentieth century the prehistory of the municipality of Cabo Rojo has been intensely studied because of the large number of pre-Columbian archaeological sites located in this southwestern region of the island of Puerto Rico. The first references to the prehistory of Cabo Rojo begin with Dr. Enrique Dumont in 1876, when he mentions the existence of an indigenous collection belonging to Mr. Antonio Carbonell de Cabo Rojo. Already towards the beginning of the twentieth century, the Puerto Rican researcher Dr. José L. Montalvo Guenard, carried out some archaeological work in the western part of Puerto Rico. During his incursion he discovered several indigenous sites in the municipality of Cabo Rojo, including the Punta Ostiones site.

Between 1914 and 1915, under the auspices of the New York Academy of Sciences, researchers N. L. Briton and J. Alden Mason conducted a series of surveys in the southwestern part of Puerto Rico. Another of the American researchers who visited Cabo Rojo was Samuel K Lothrop between 1915-1916. He conducted an archaeological survey throughout Puerto Rico, finding a variety of sites. Of the most important deposits found in its recognition on the island was Punta Ostiones de Cabo Rojo. In 1916, Herbert J Spinden carried out the first systematized archaeological excavation for Puerto Rico at the Punta Ostiones site in Cabo Rojo. This raid also mapped the excavations carried out by Spinden. The Museum of the American Indians, Heye Foundation in New York was surprised by the large artifacts discovered years earlier by researchers Britton, Mason, and Spinden among others. This led to some sponsored excavations at the Punta Ostiones and Joyuda sites. These were made by Theodore de Booy, who extracted indigenous materials in these two sites.

In 1917, Puerto Rican researcher Adolfo de Hostos made several incursions into various prehistoric places in Cabo Rojo. In 1919, Adolfo de Hostos visited the southwest coast again, and excavated at the Punta Ostiones site in Cabo Rojo. In 1934 Dr. Froelich Reney visited the Boquerón and Punta Ostiones deposits in Cabo Rojo. During the 1930s, the American researcher Irving Rouse, made an archaeological survey throughout the island of Puerto Rico. With respect to the west coast of the Island. He visited and excavated stratigraphically at the Punta Ostiones and Boquerón sites. His notes were as follows: "The present writer surveyed the site on July 28, 1937, also purchasing several specimens from the inhabitants."

The works of Irving Rouse are of great value for archaeology in Puerto Rico. From this site, Rouse developed and named "Ostionan Ostionoid" one of his Chronological Periods on the pre-Columbian period in Puerto Rico.

In 1970, a resident of Cabo Rojo—known as Mrs. Dorothy Pike—discovered a site in the Cerrillos sector of Guanajibo, which was later excavated by archaeologists Agamemnon Gus Pantel, Jeff Walker, and Antonio Ramos Cofresi. The archaeologist Luis Chanlatte visited in 1970, the Punta Ostiones site of Cabo Rojo. During his visit he identified what

appears to be several South American shells from the Pacific coast. Which he infers and proposes that the Punta Ostiones Site was a port of exchange of goods between the Indians of the Greater Antilles and indigenous people of South America.

In 1979, archaeologist Juan González completed an inventory of archaeological sites around the island. His work helped locate well-known sites and several additional new cultural resources. In 1998, archaeologist Marisol Meléndez Maíz presented a study on the Punta Oysters site. In his work, he analyzed the ceramics and depositional sequence of the collection excavated by Herbert Spinden in 1916. This work promoted the inclusion of the Punta Ostiones Site in the National Register of Historic Places. Finally, in 2002, archaeologist Sharon Meléndez Ortiz, presented her thesis entitled "Punta Ostiones: The Research Potential of a Prehistoric Caribbean Site", where she presents a historical account of the events that occurred in this important site of Cabo Rojo.

The State Historic Preservation Office has listed 206 archaeological sites identified in Cabo Rojo. The Council for the Protection of Terrestrial Archaeological Heritage (ICP) identifies only one hundred and two (102) archaeological sites in the municipality of Cabo Rojo. Cabo Rojo is one of the municipalities with the highest concentration of pre-Columbian and historical cultural resources. However, the municipality of Cabo Rojo has only three cultural resources listed in the National Register of Historic Places (RNLH). These are the Morrillos de Cabo Rojo Lighthouse built in 1882, included on October 22, 1981, the Punta Ostiones Archaeological Site included on August 26, 2004, and Escuela James L. M Curry included on December 30, 2019. Neither of these two important resources are in the Urban Center of Cabo Rojo where the project under evaluation is located.

Analysis of the Urban Archaeological possibilities

The project under evaluation is in the urban area of Cabo Rojo. The foundation of the village dates to 1771. The urban core of Cabo Rojo was established on that same date. Getting started with the establishment of the Main Square, the urban grid formed by the streets of the town was gradually established during the following centuries. We can establish that the area of the Main Plaza and the four streets around the Main Square constitute the oldest core of the urban center of Cabo Rojo. The main square and the four surrounding streets are Rios Rivera Street, Ruiz Belvis Street, Barbosa Street, Muñoz Rivera Street. Starting from the layout of the initial grid, through the nineteenth century, new streets were added to the arrangement of the initial grid and additional streets were established during the nineteenth century. The urban grid by the end of the nineteenth century reached ten horizontal and seven verticals' streets.

The project under evaluation includes improvements to streets established during the nineteenth century such as streets; De Hostos Street, Dr. Henna Street, Jose de Diego Street, Baldorioty Street, Betances Street, Mariano Quinonez Street, Jimenez Street, Manuel Rossy

Street, Labra Street and Mestre Street.

The process of expansion and addition of new streets to the urban center continued during the first half of the twentieth century. During the first half of the century, new streets in the urban area of Cabo Rojo emerged, among them: Dr. Ángel Franco Street, Máximo Gómez Street, General Antonio Maceo Street, Salvador Mestre Street, Jiménez Street and Paseo Zolio Santiago. The project includes rehabilitation improvements and repairs to those streets.

The project also proposes intervention in areas developed during the second half of the twentieth century, such as PR-103 Km. 6.0 to PR-308 Km. 0.0 and Int. PR-100 to PR-308 Km. 0.0. From the analysis of the cultural resources identified in the urban area of the town of Cabo Rojo contrasted with the field tour carried out in the project area at the beginning of February 2023, it is evident that the amount of historical-architectural cultural resources exceeds by dozens the ten (10) historic resources identified in PR-SHPO and ICP/CAT (Table 1). Of these ten (10) previously identified cultural resources only three (3) are within the direct APE. CR-02-00005 / CR-118 corresponds to Garrow Site 19 a 19th Century ruins related to a Hacienda House that was demolished in 1986, the site encompasses the entire block defined by the Ramon Emeterio Betances, Maximo Gomez, Ramon Baldorioty de Castro and Salvador Mestre Streets. Historical Cultural materials like ceramics and construction materials have been recovered from this site while it was studied by Garrow and Associates in 1985 (SHPO-11-26-85-01). CR-02-00006 corresponds to the historic A.R.R. railroad station building and CR-02-00011 corresponds to the historic Carbonell Power Plant. These are all historical cultural resources, and all correspond to structures.

Ten (10) Archaeological Studies were identified within the quarter mile research buffer zone (Table 2). Only four (4) of them bore positive results and none of them are within the direct APE. Additionally, all findings correspond to historic cultural materials. There is no study that identified prehistoric cultural material within the direct APE or indirect APE of this project.

CR-97-11-07, a phase IA-IB study by Eduardo Questell Rodriguez, did not identify any prehistoric cultural material but did identify two historic railroad bridges. These bridges were later recognized properly by the ICP/CAT and were given the designation IDs of CR-186 and CR-187. CR-186, Railroad bridge #1 is within this project indirect APE at 0.07 miles to the northeast.

SHPO-11-26-85-01, Phase 1, studied the remains of the demolished hacienda identified as Garrow Site 19, CR-02-00005 / CR-11 Cultural Site, mentioned before. 196 ceramic fragments were recovered from the surface and the two (2) shovel test pits excavated. Carbon testing of the ceramics recovered yielded a A.D. 1829.78 date. The bricks in the study were identified as been made by Juan Bautista Buyé a brick maker that operated in Cabo Rojo. At the time of the study the bulldozed property was owned by the Municipality

of Cabo Rojo. Historical Cultural Material remains unearthed on site.

The other two positive studies both relate to the same site. CR-05-24-05, a Phase IA study by Jesús F. Figueroa Lugo, surveyed the possibility of unearthing cultural resources during the improvements to the electrical system and bordering fence of the San Miguel Arcangel Catholic Parish. This site is identified at SHPO by the identification number: CR-02-00027 was built in 1771 and is within the indirect APE at the center of the Traditional Urban Center at about 0.03 miles of the direct APE. The archaeologist in charge concluded that the potential for historic cultural remains was high for the catholic parish site and identified, the original stairs that gave access to the parish and the location of the original cemetery at the east of the parish building. He recommended a Phase III Archaeological Mitigation due to the importance of the findings.

Five years later, in 2010, the Phase III Archaeological Mitigation was done by Norma Medina Carillo. The project with id CR-10-36-04 studied the three trenches excavated for the installation of the new electrical system and fence. Trench A corresponded to the North and northern part of the West fence, Trench B to the East fence and Trench C to the South and southern part of the West fence. While excavating Trench B a structure made of bricks and mortar was found. The structure extends to the nearby gardens in the plaza and was identified as a water cistern. The portion of the structure identified as element 1 was located at 50 cm deep and is 22 cm wide. The bricks are 4 cm deep, 11 cm wide and 35 cm long. The cistern was covered in plastic to preserve it and a new foundation for the fence was built on top of it. During the excavation of Trench A, multiple historic cultural materials were identified while sieving the excavated dirt. Between 0-12 cm fragments of historic hydraulic concrete tiles were found. Additionally fragments of bricks and terracotta tiles were found from a fill layer near the lateral entrance to the parish. During the Trench C excavations multiple historic foundations were found. Between 0-6 cm a concrete floor or foundation was identified. Between 6-10 cm a brick foundation was identified. Finally, between 10-61 cm a wall or foundation made of bricks, rocks and concrete was identified.

The author concluded the following. The excavations of Trenches A and B evidenced a fill layer with slabs inclusions possibly to give it stability. It is this fill layer that contains the cultural materials. The layer underneath is a sterile clay layer free of cultural materials. During the excavation of Trench C with the exposure of its foundations a wall was detected which possibly reinforces the old sidewalks that border the parish house at the east. During the entire monitoring process, no human remains were detected. She endorsed the continuation of the improvements to the electrical system and fence.

Table 1: Previously Identified Cultural Resources

SITE ID	SHPO | ICP/CAT	Name	Description	Distance
CR-01-00087	SHPO	Conchero Cerro del Niño	Pre-Columbian	0.06 miles
CR-01-00103	SHPO	12-7-2 Complejo Deportivo Municipal: PRCR72	Historic	0.22 miles
CR-02-00005 / CR-118	BOTH	Garrow Site 19	Historic/ No. 49 Maximo Gomez Street	0.00 miles
CR-02-00006	SHPO	Cabo Rojo Railroad Station A.R.R.	Historic / No. 4 Barbosa Street	0.00 miles
CR-02-00011	SHPO	Carbonell Power Plant	Historic	0.00 miles
CR-02-00015	SHPO	Fábrica de Cal Wiscovitch	Historic	0.017
CR-02-00024	SHPO	Pedro F. Colberg School	Historic / Rius Rivera Final Street	0.05 miles
CR-02-00025	SHPO	Luis Muñoz Marin School	Historic / No. 77 Rius Rivera Street, Pueblo Nuevo Sector	0.02 miles
CR-02-00027	SHPO	San Miguel Arcangel Church	Historic /Public Square of Cabo Rojo Built in 1878	0.03 miles
CR-186	ICP/CAT	Puente de Ferrocarril #1	Historic	0.07 miles

Table 2: Archaeological Reports in the Urban Center of Cabo Rojo

ICP/CAT ID	Project Name	Phase	Archaeologist	Results	Comments	Distance
SHPO-11-26-85-01	Garrow Site 19	Phase 1	Daniel T. Bliott	Positive	Site was demolished in 1986, Carbon testing identified the ceramic belonging to the 19th Century, historic material culture related to this Hacienda remains unearthed on site.	0.00 miles
ICP/CAT-CR-87-02-04	Mejoras al sistema de acueductos	Phase IA-IB	Harry Alemán Crespo	Negative	NONE	0.00 miles
ICP/CAT-CR-94-08-03	Construcción de Almacén a la Fábrica Sanz Tropical Mfg. Co.	Phase IB	José Muñoz Vázquez	Negative	NONE	0.02 miles
ICP/CAT-CR-94-09-03	Construcción Condominio Borinquen Gardens	Phase IA-IB	José Muñoz Vázquez	Negative	NONE	0.13 miles
ICP/CAT-CR-97-11-07	Estancias Del Cemí, carr. PR-102 km 5.4	Phase IA-IB	Eduardo Questell Rodríguez	Positive	Two (2) small railroad bridges were discovered that will not be affected at all by the project. Site identified as CR-186.	0.08 miles

ICP/CAT ID	Project Name	Phase	Archaeologist	Results	Comments	Distance
ICP/CAT-CR-05-24-05	Mejoras a la verja y soterrado eléctrico Iglesia San Miguel Arcángel	Phase IA	Jesús F. Figueroa Lugo	Positive	Church of 1783, possible cemetery	0.03 miles
ICP/CAT-CR-08-32-01	Sistema de Disposición de Aguas Usadas de Cabo Rojo Anejo de Dos Nuevos Transeptos	Phase IB	Virginia Rivera Calderón	Negative	NONE	0.20 miles
ICP/CAT-CR-10-36-04	Mejoras a la verja perimetral y a los pisos de concreto del atrio de la Iglesia San Miguel Árcangel	Phase III	Norma Medina Carrillo	Positive	"...the excavation of Trench C with the exposure of the foundation of the 1947 fence detected a wall that secures and reinforces the section of the former sidewalk bordering the Parish House to the East..." Page 29.	0.03 miles

Preliminary Results:

In our opinion, the proposed project will be conducted on an urban core area founded back in the eighteenth century. The Main Plaza and the four streets surrounding the Main Plaza correspond to the late eighteenth century. Then the streets surrounding the urban core developed during the nineteenth century. The archaeological contexts related to

the urban interventions of the eighteenth and nineteenth centuries are part of the historical archaeological resources of the town of Cabo Rojo.

Based on the results of previous archaeological investigations within a 0.25-mile radius and the density of extant historic structures within the urban core of Cabo Rojo, the project APE is considered to be highly sensitive to the presence of intact cultural materials. The proposed ground-disturbing activities have a high potential of encountering historical structural and infrastructural remains and indigenous material culture. Therefore, archaeological monitoring is recommended during all demolitions, excavations, and any additional ground-disturbing activities.

Identification of Historic Properties – Architecture

Existing information on previously identified historic properties has been reviewed to determine if any such properties are located within the APE of this undertaking. The review of this existing information, by a Program contracted Historic Preservation Specialist meeting the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61), shows that the project area is within the boundaries of the National Register of Historic Places (NRHP)-eligible Cabo Rojo Traditional Urban Center. This area contains numerous historic architectural resources related to the early settlement, agricultural and maritime economic development, population growth through immigration, and architectural evolution of Cabo Rojo from the late 18th through early 20th centuries. In the 1/4-mile research radius, there are 15 properties eligible for the National Register of Historic Places (NRHP), 2 properties already listed on the NRHP, and 10 properties that are designated as historic at the local level.

The Cabo Rojo Traditional Urban Center, encompassing approximately 2 km x 3 km and established around the town's early core founded in 1771, is home to numerous historical architectural resources that played pivotal roles in the town's settlement, agricultural development, immigration, and economic growth.

Properties Listed in the National Register of Historic Places:

- Faro de los Morrillos de Cabo Rojo (Cabo Rojo Lighthouse) - Listed 1981. Located at 18.087046° N, -67.148151° W. Approximately 0.8 km southwest of the project area.

- James L.M. Curry Vocational High School - Listed 1988. Located at 18.085925° N, -67.146937° W, on Calle Betances within the project area.

Potentially Eligible Properties Identified Through Field Surveys:

In addition to these known resources, project streets contain concentrations of potentially

eligible commercial and residential buildings, identified through field surveys:

- Calle Mariano Quiñones - Cluster of early 20th century vernacular residences located within project area.
- Calle Ruiz Belvis - Late 19th century commercial structures located within project area.
- Calle Barbosa - Mix of 19th and early 20th century residences and commercial buildings within project area.
- City Hall – Located at 18.085685, -67.146742. It has an architectural style that incorporates historicism and eclectic, with Hispano-Arab elements (lobed arches) and classical. It was constructed in 1907, with an intervention in 1958.
- Municipal Cemetery Las Delicias/San Martín de Porres – Located at 18.094890, -67.149681. It was constructed between 1813 and 1880 and has several three-story niche structures in brick, with vaults of the same material.
- Bracero Cafeteria – Located at 18.086079, -67.145716. It was constructed around 1900 and is a wooden building with a four-sloped roof, corresponding to the typology of a wooden Creole house, although is for commercial use.
- Pedro F. Corberg School – Located at 18.087529, -67.143609. It was constructed between 1920 and 1936 and features elements of classic and mannerist architecture.
- Dr. Héctor "Jr." Marty Carrillo Multiple Activities and Services Center – Located at 18.088690, -67.144052. It was constructed around 1917 and corresponds to the typology of municipal hospitals from the early part of the 20th century.
- Presbyterian Church of Cabo Rojo – Located at 18.086061, -67.146801. Its foundation dates to 1903, although the building appears to have been remodelled.
- San Miguel Arcángel Parish– Located at -18.086789, -67.146130. The original construction dates to 1785, though it has undergone modifications, especially to the façade and roof, it keeps predominantly classic architectural elements.
- Masonic Lodge Cuna de Betances No. 42 – Located at 18.085745, -67.145884 and birthplace of Ramón E. Betances y Alacán, this building combines classic elements with pointed arches and a reduced barrel vault ceiling.

- Dr. Ramón Emeterio Betánces y Alacán Plaza – Locates at 18.087148, -67.146139. This building contains historic and contemporary sculptural elements, as well as an acoustic shell.

- Lolita Montalvo Cordero Market Plaza – Located at 18.086102, -67.146326. It was built in 1908, with repairs and remodelling in subsequent years.

- Residential Santa Rita de Casia – Located at 18.083062, -67.14619. It was originally consisted by 21 buildings and was occupied in 1954.

- Excelsior Theater – Located at 18.086108, -67.146025. It was originally consisted of a nave with a gabled roof, with a façade suggesting the form of a pediment and pilasters and today functions as a cinema.

More in-depth evaluation (archaeological monitoring) will be necessary where the milling, excavation, and demolition proposed in the project activities may impact character-defining features of these properties, which appear eligible for NRHP listing as district contributors based on age, architecture, and role in Cabo Rojo's development.

While the primary scope of work is within existing rights-of-way, sensitivity will be employed during construction to ensure activities do not inadvertently alter attributes that qualify adjacent historic buildings.

Determination

The following historic properties have been identified within the APE:

- Direct Effect:
  - The James L.M. Curry Vocational High School (listed 1988), located on Calle Betances, is within the indirect/visual APE, and will be directly affected by roadway, sidewalk, and lighting improvements adjacent to the property. The project can directly impact the James L.M. Curry Vocational High School school's perimeter (fence) during the excavation and the new construction of the sidewalk.
  - Potential historical archaeological deposits related to the foundation of the Traditional Urban Center.
  - CR-02-00005 / CR-118 Historic Hacienda Garrow Site 19, CR-02-00006 the historic A.R.R. Cabo Rojo Railroad Station Building and CR-02-00011 the historic Carbonell Power Station.
- Indirect Effect:
  - Historic buildings along project streets which appear eligible for NRHP listing as district contributors. While outside the right-of-way, indirect effects are possible from adjacent construction activities.
  - The renovation of sidewalks and streets will not affect the character of the NRHP-eligible Cabo Rojo Traditional Urban Center.

Based on the results of our historic property identification efforts, the Program has determined that proposed project actions will affect the historic properties that compose the Area of Potential Effect. The project has the potential to result in impacts potential archaeological deposits from subsurface disturbance. The long period of continuous occupation means the project area has high sensitivity for subsurface archaeological deposits that may extend below modern fill layers and pavements. While proposed work involves surface repairs, isolated excavations have the potential to encounter historical archaeological materials in the intact strata. Any subsurface activities will therefore require Archaeological Monitoring and sensitive construction methods to avoid impacts to resources.

Recommendation

The Puerto Rico Department of Housing requests that the Puerto Rico SHPO concur that the following determination is appropriate for the undertaking (Choose One):

☐ No Historic Properties Affected

X No Adverse Effect

Condition: (1) Archaeological monitoring will be conducted during all ground disturbing activities. An archaeological monitoring plan will be prepared and submitted to the PRSHPO for review and approval of appropriateness for implementation.

(2) Character-defining features of adjacent historic buildings, including porches, cornices, windows, and materials will be protected from damage.

☐ Adverse Effect

Proposed Resolution (if appliable): n/a

This Section is to be Completed by SHPO Staff Only

The Puerto Rico State Historic Preservation Office has reviewed the above information and: ☐ **Concurs** with the information provided. ☐ **Does not concur** with the information provided.	
Comments:	
Carlos Rubio-Cancela State Historic Preservation Officer	Date:

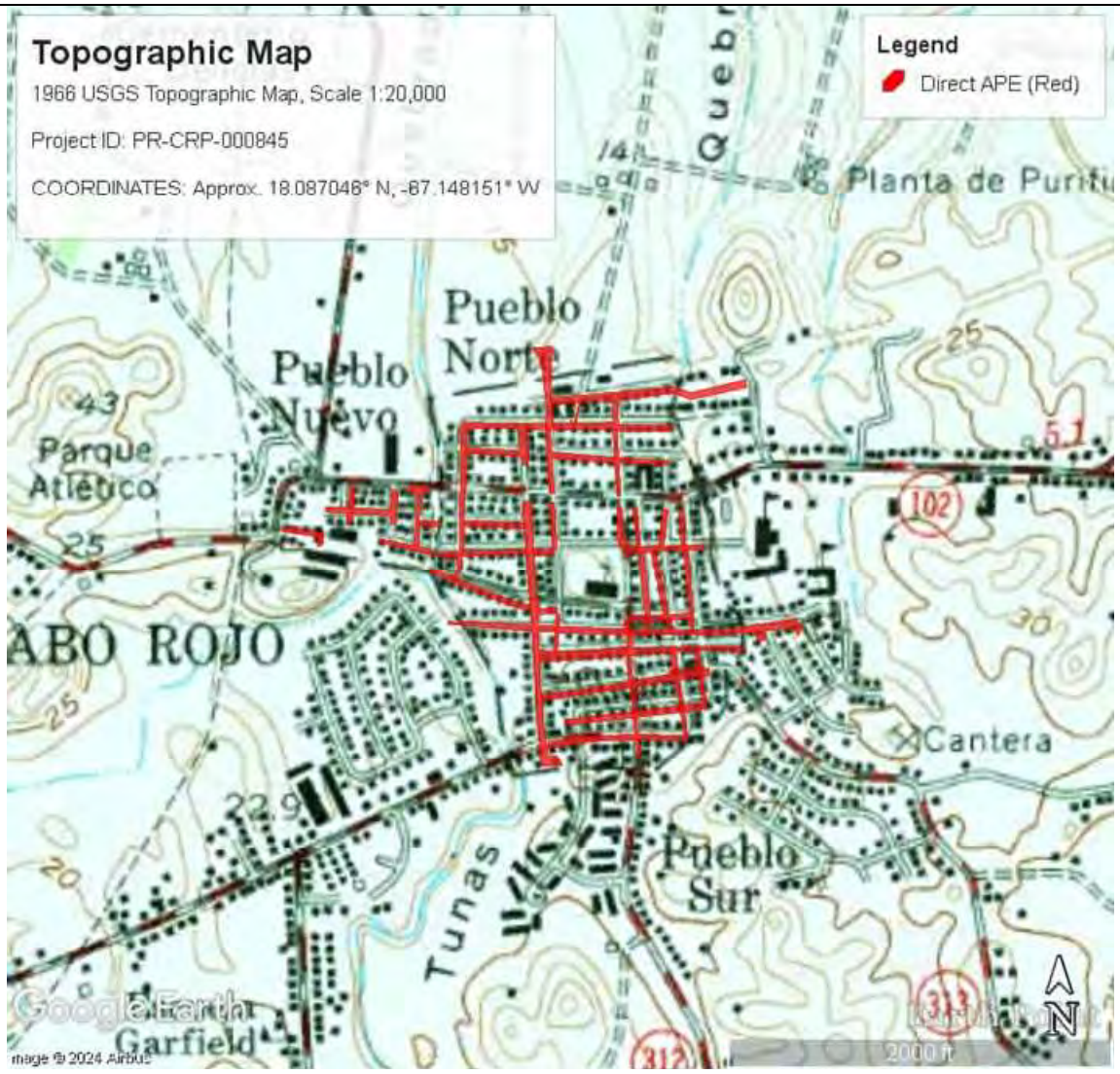
Project (Parcel) Location – Area of Potential Effect Map (Aerial)

Description: Aerial image from Google Earth 2022 depicting the project area and direct APE (blue outline) for the rehabilitation of infrastructure in the Cabo Rojo urban center, Puerto Rico. The APE encompasses the streets and sidewalks within the historic downtown area.

Project (Parcel) Location - Aerial Map

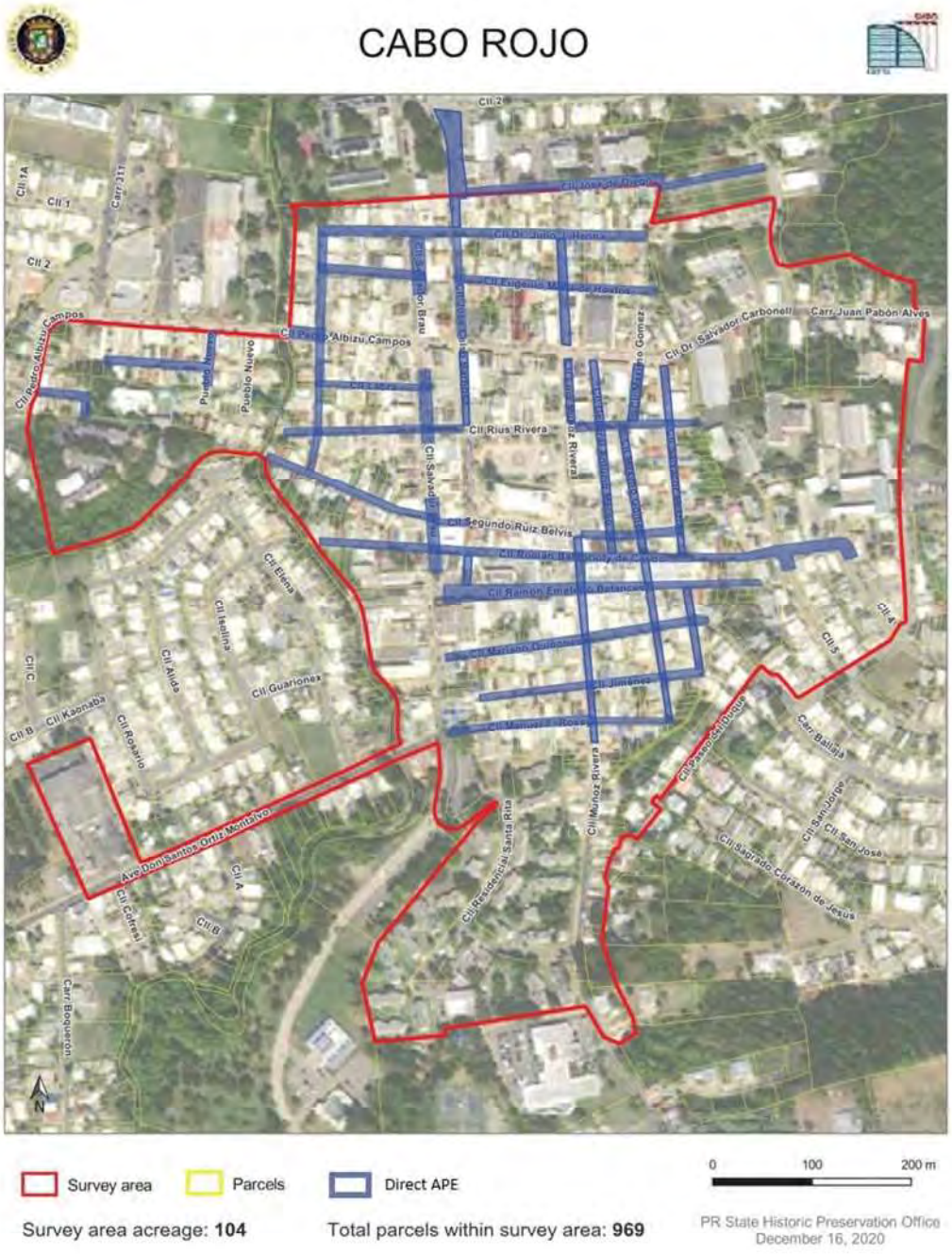
Description: Aerial view from Google Earth 2022 showing the location and boundaries of the project area for the rehabilitation of streets in the Cabo Rojo urban center, Puerto Rico. The APE encompasses on Calle Salvador Mestre, Calle Betances, Calle Mariano Quiñones, Calle Muñoz Rivera, Avenida Santos Ortiz and adjoining streets within the historic downtown area. Major landmarks visible include the Plaza de Recreo y Cultura at the center of the APE and the Cabo Rojo Bay to the south.

Project (Parcel) Location – Topographic Map



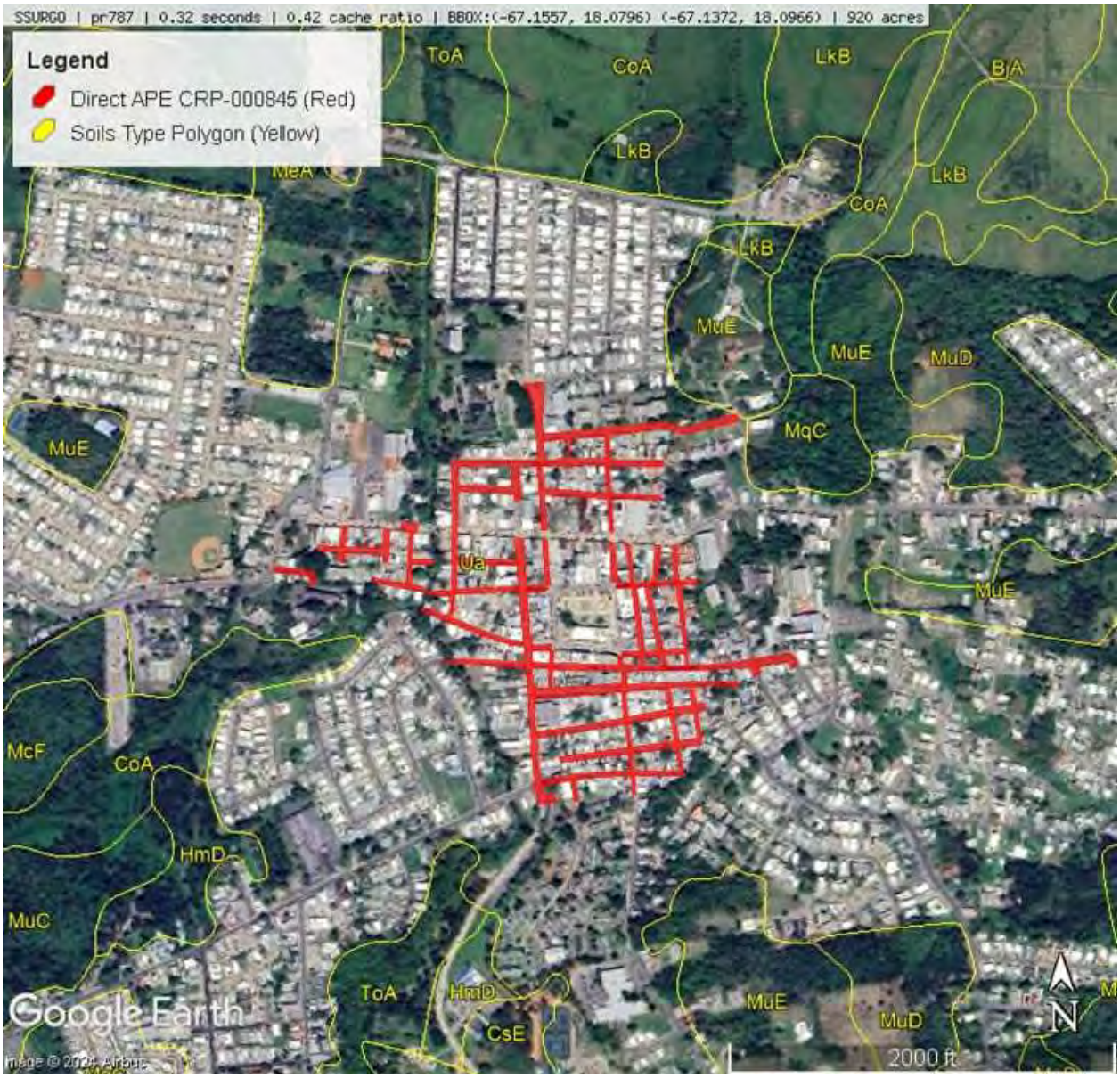
Description: 1966 Topographic Map overlayed using Google Earth showing the location and boundaries of the project area for the rehabilitation of streets in the Cabo Rojo urban center, Puerto Rico.

Project Location Cabo Rojo Urban Center



Description: Project Area / Direct APE is identified in blue.

Project (Parcel) Location – Soils Map

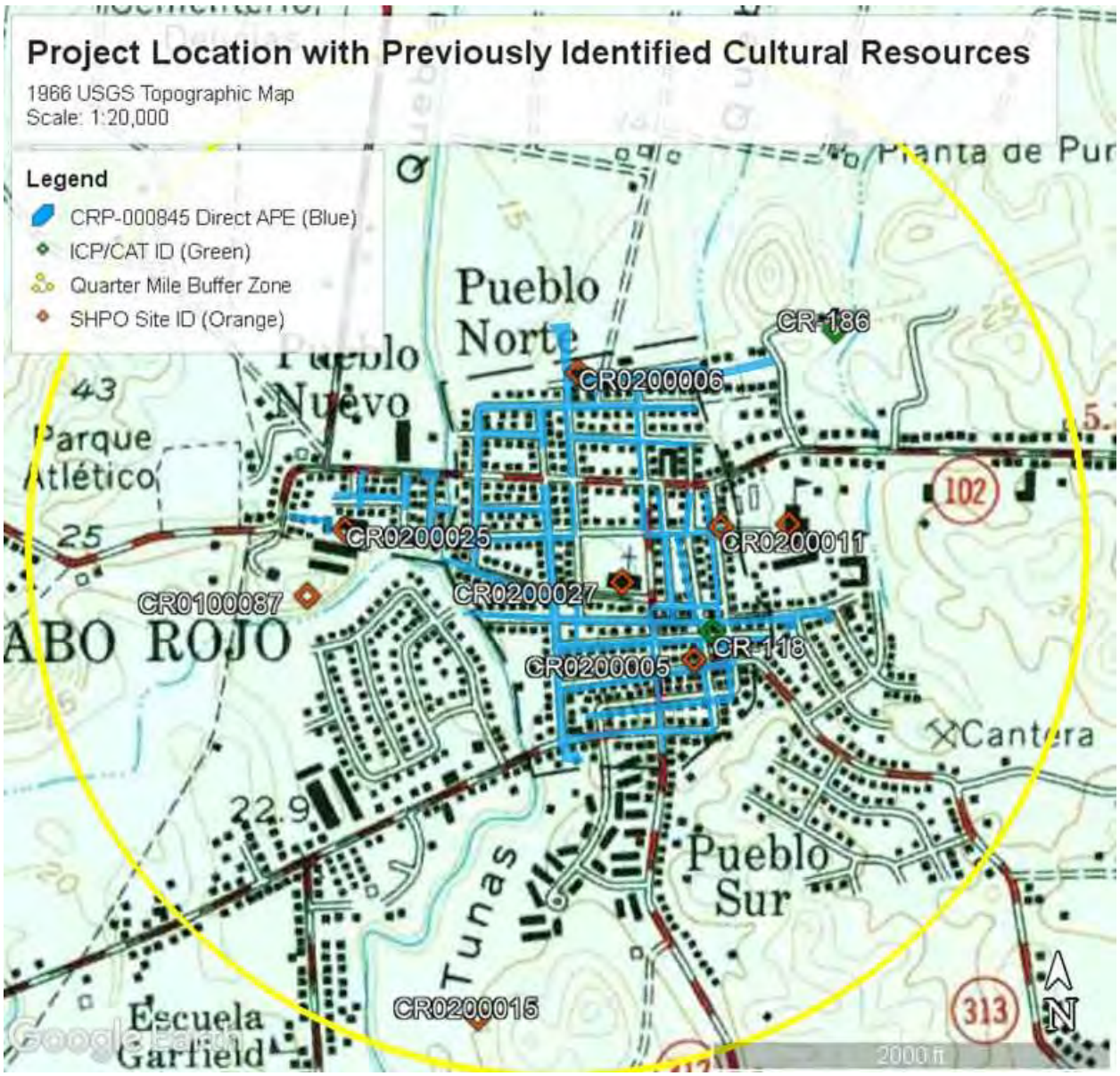


Description: The image above showcases a soils map sourced from ARCGIS USDA-NCSS SSURGO and STASGO Soil Survey Interface.

Project (Parcel) Location with Previous Investigations (Archaeology) - Aerial Map

Description: The image above showcases all archaeological studies within a quarter mile of the direct APE.

Project (Parcel) Location with Previously Recorded Cultural Resources (Archaeology) USGS Topographic Map

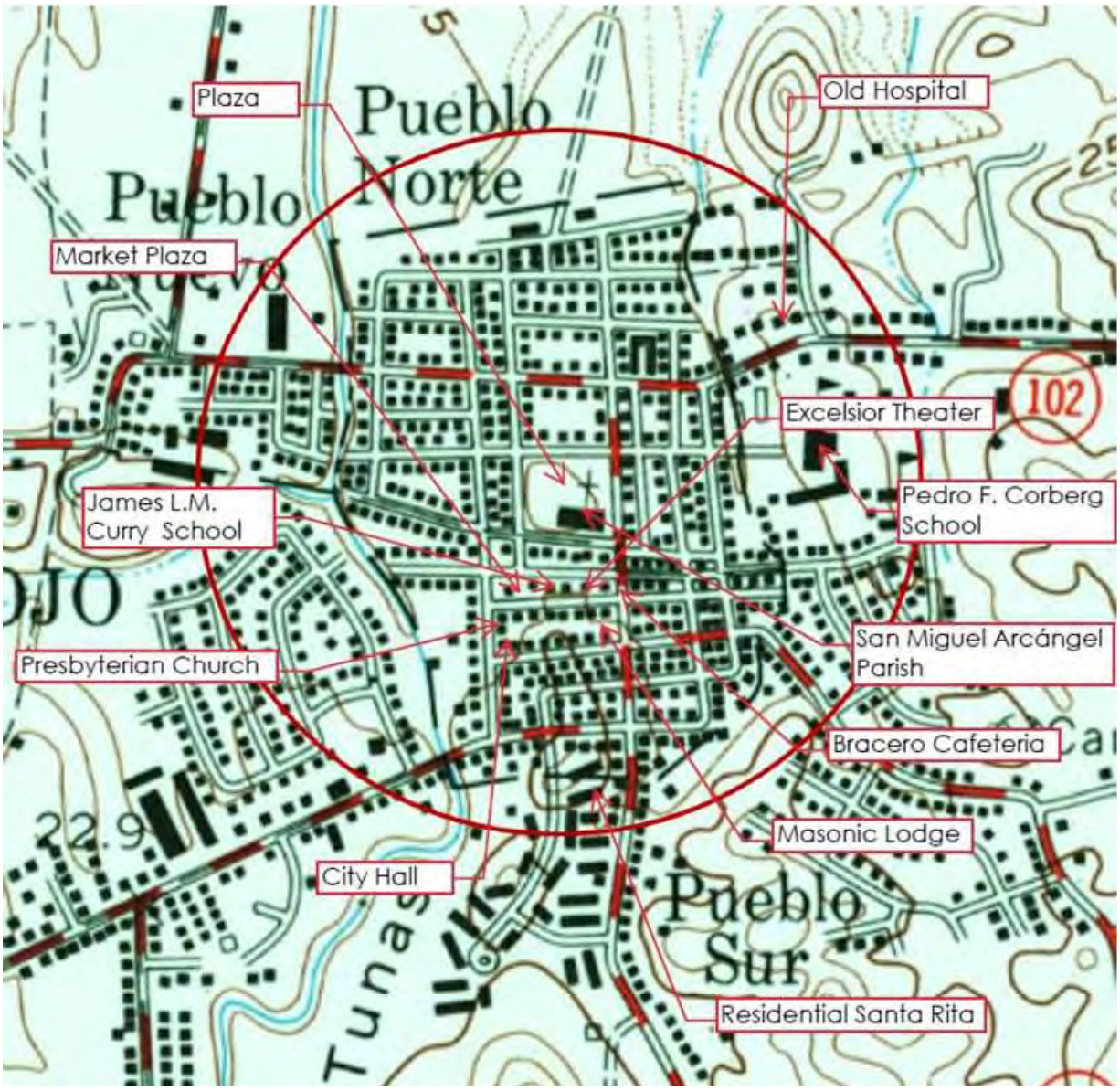


Description: The image above showcases all previously known cultural sites at SHPO and ICP/CAT.

Project (Parcel) Location with NRHP listed and Eligible Properties - Aerial Map

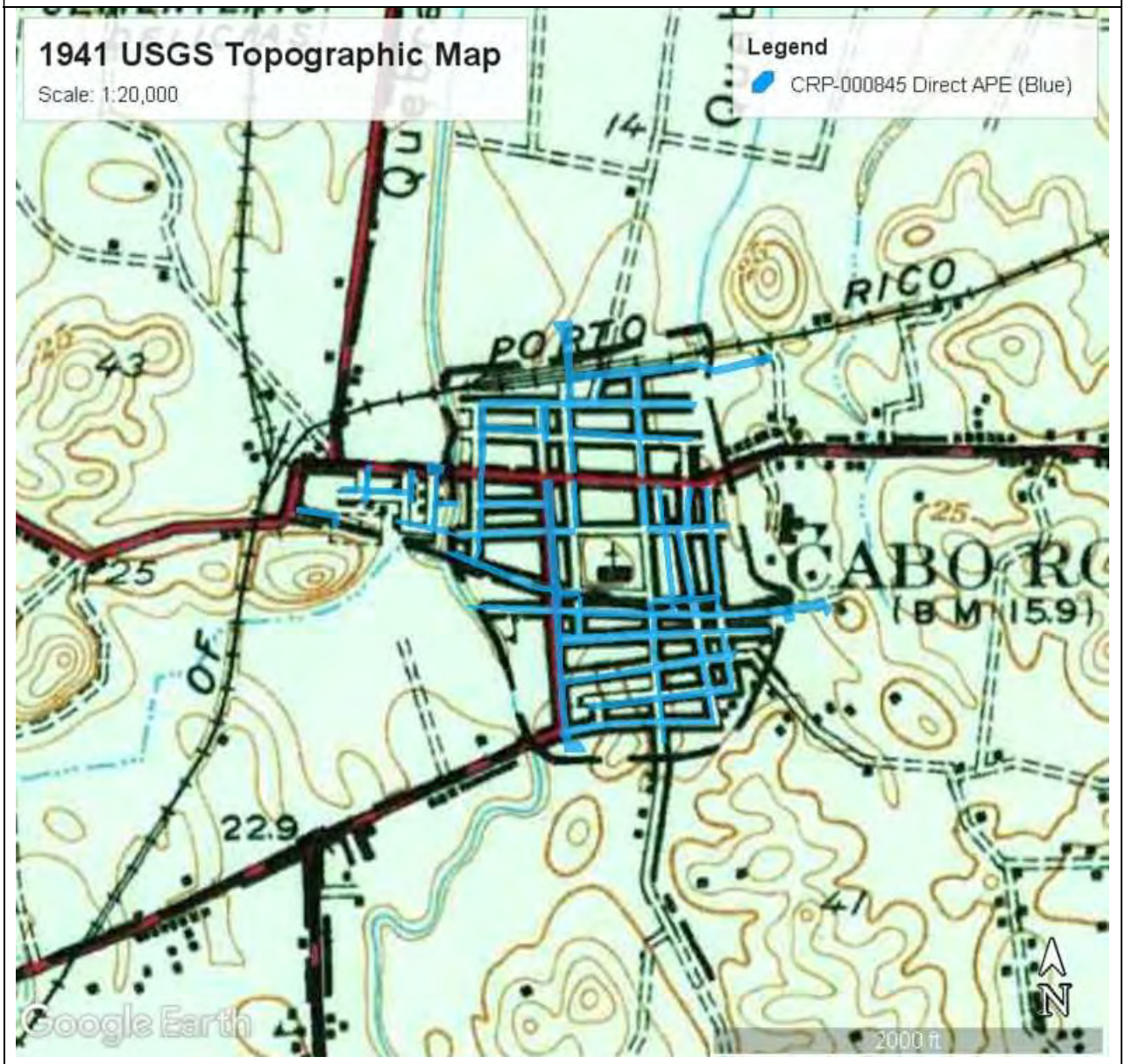
Description: The image above showcases historic properties within a quarter mile of the direct APE.

Project (Parcel) Location with Previous Investigations (Architecture) – Topographic Map



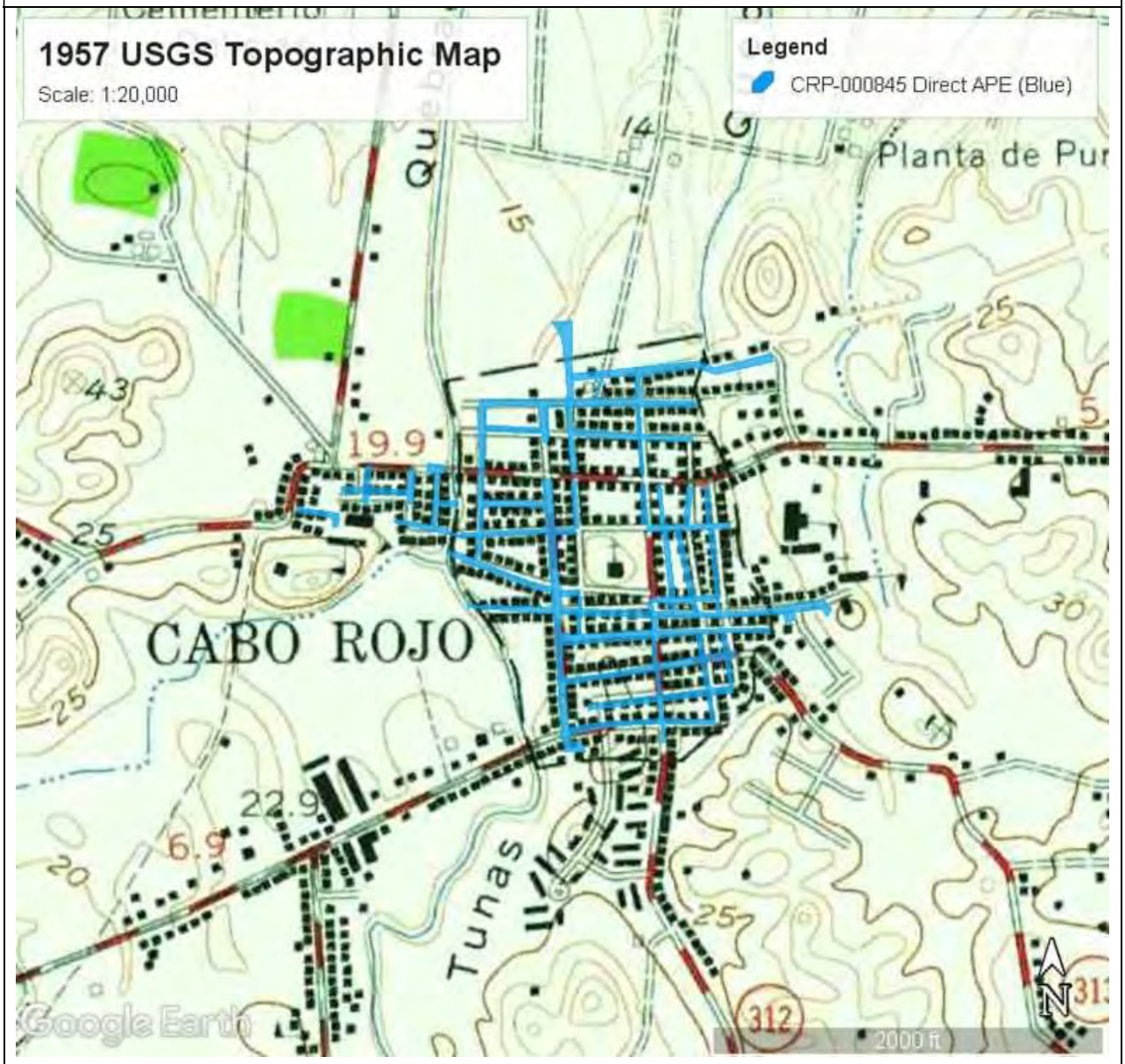
Description: The image above showcases historic properties within a quarter mile of the direct APE.

Project Location 1941 - USGS Topographic Map



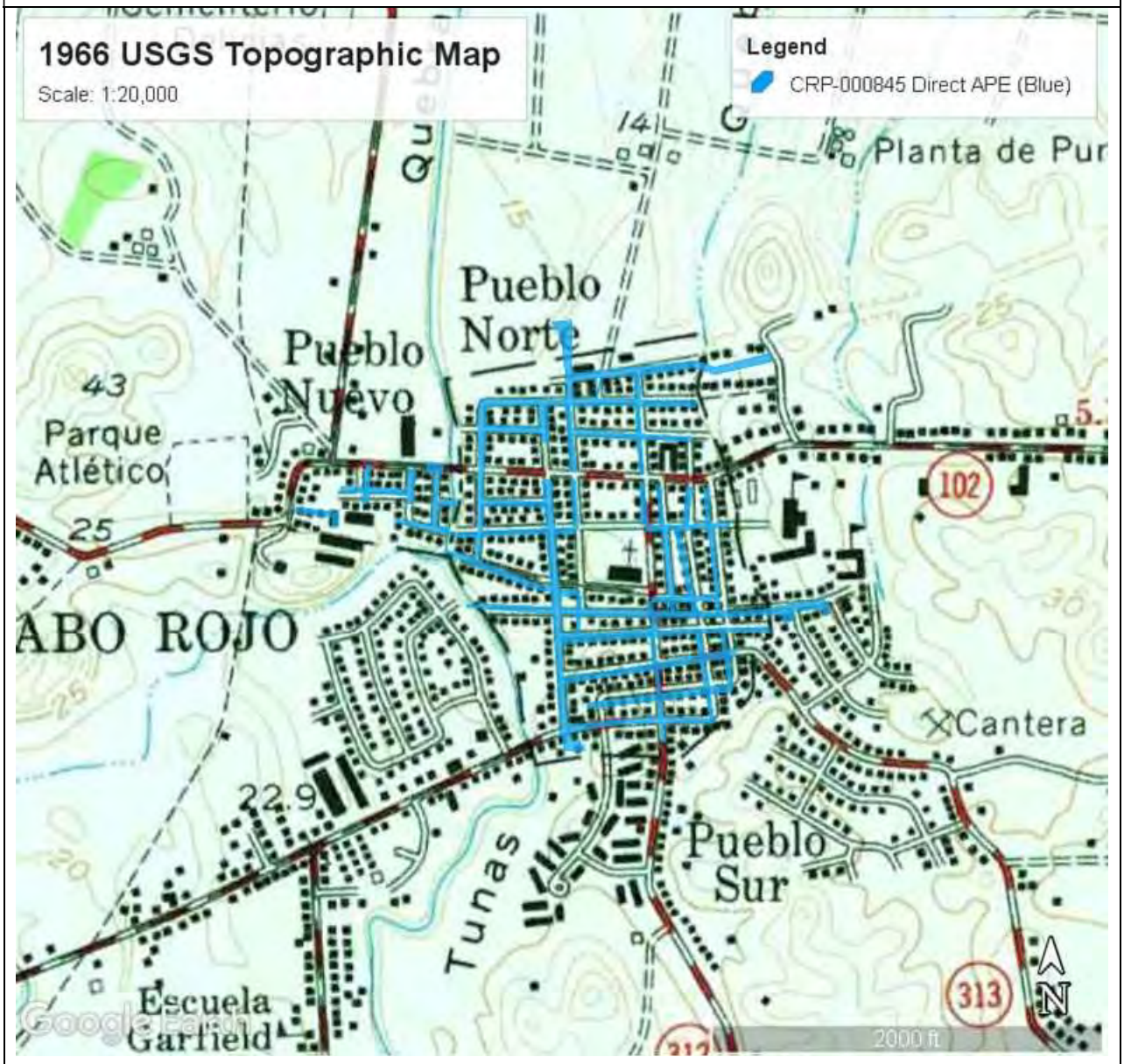
Description: 1941 USGS topographic map depicting the location of the proposed project streets within the traditional urban center of Cabo Rojo, Puerto Rico.

Project Location 1957 - USGS Topographic Map



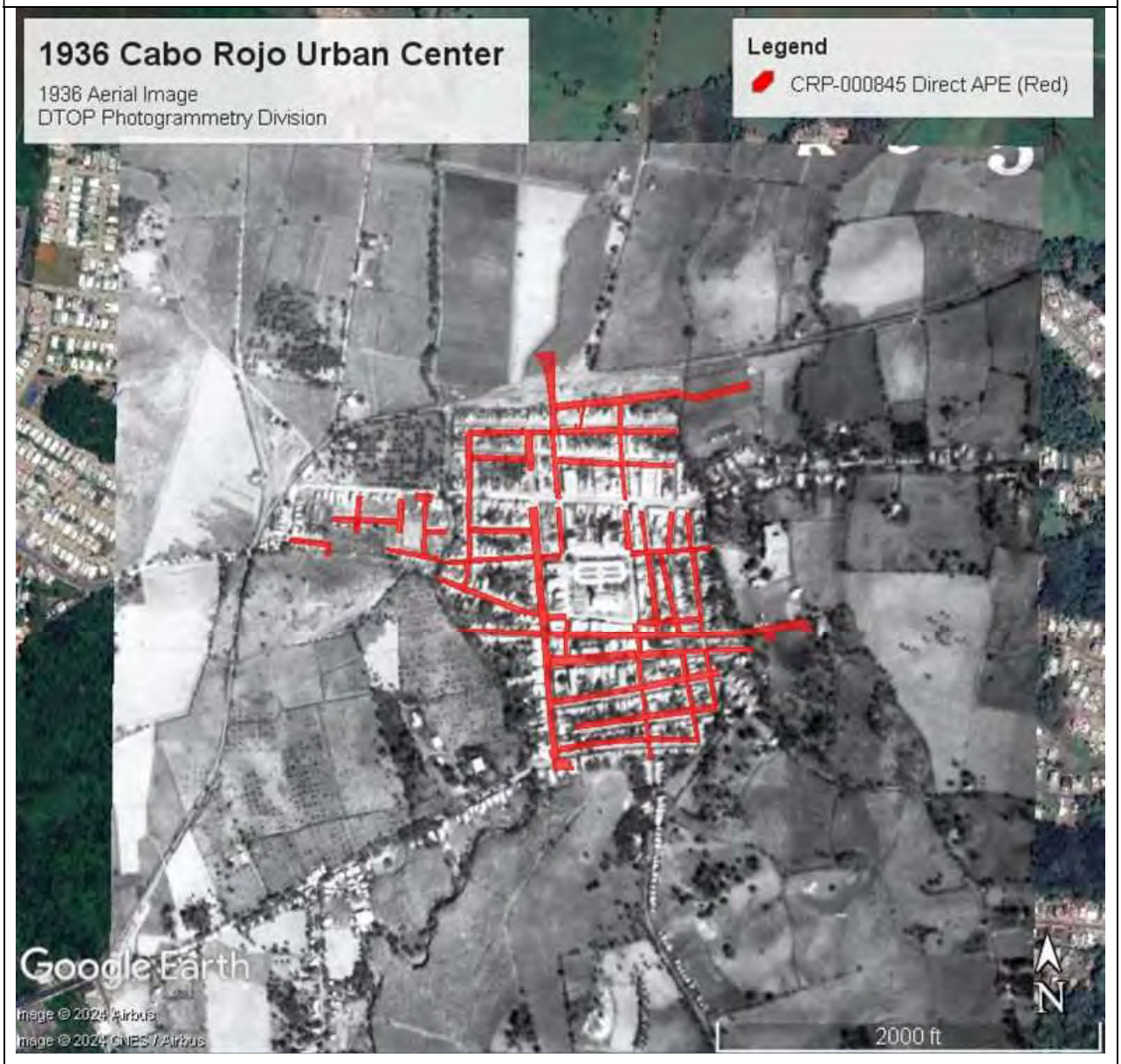
Description: 1957 USGS topographic map depicting the location of the proposed project streets within the traditional urban center of Cabo Rojo, Puerto Rico.

Project Location 1966 - USGS Topographic Map



Description: 1966 USGS topographic map depicting the location of the proposed project streets within the traditional urban center of Cabo Rojo, Puerto Rico.

Project Location Overlay over 1936 DTOP Aerial Image

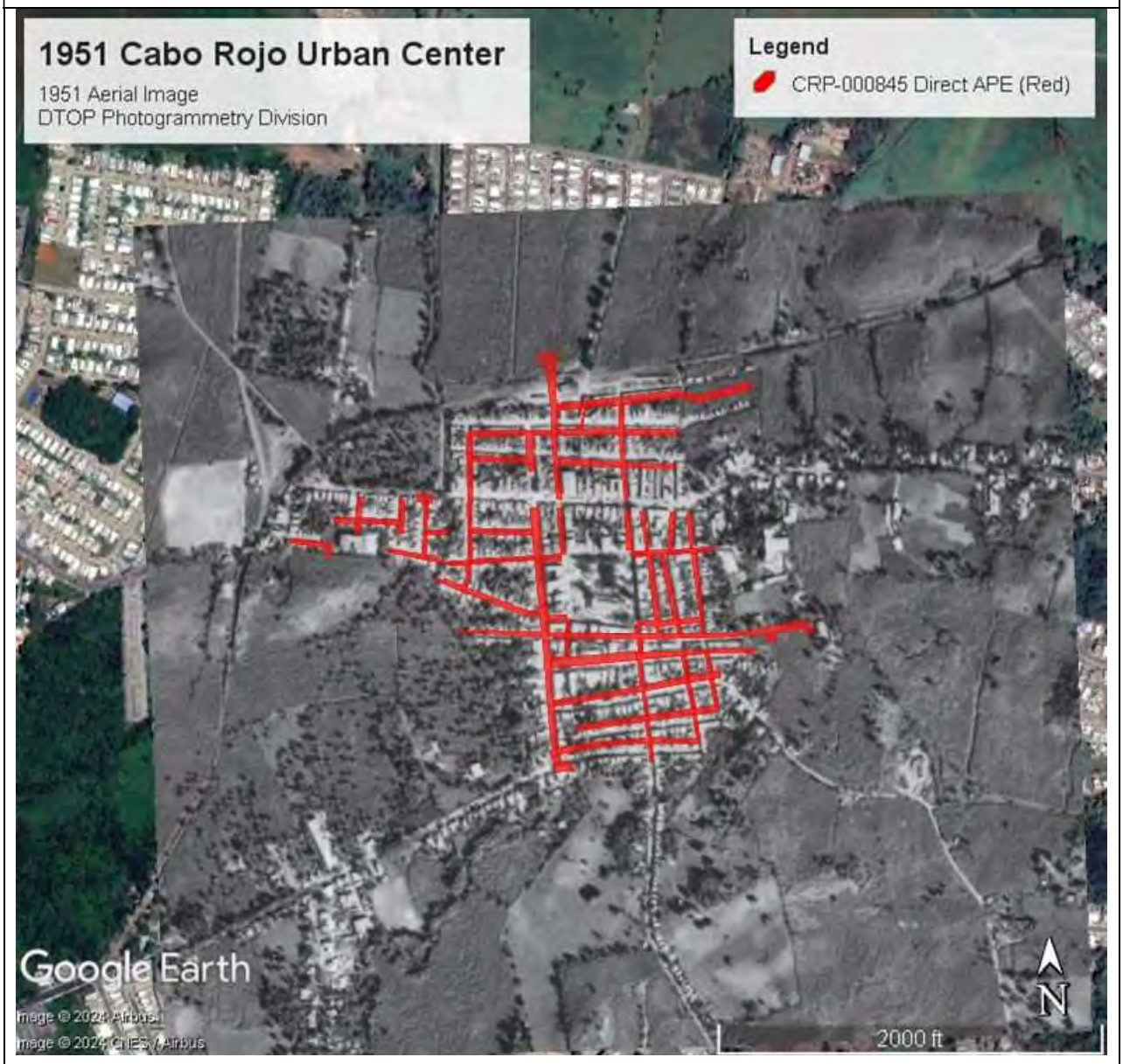


Description: The image above was sourced from the DTOP Photogrammetry Division and overlayed using Google Earth.

1936 Cabo Rojo Urban Center Aerial Image

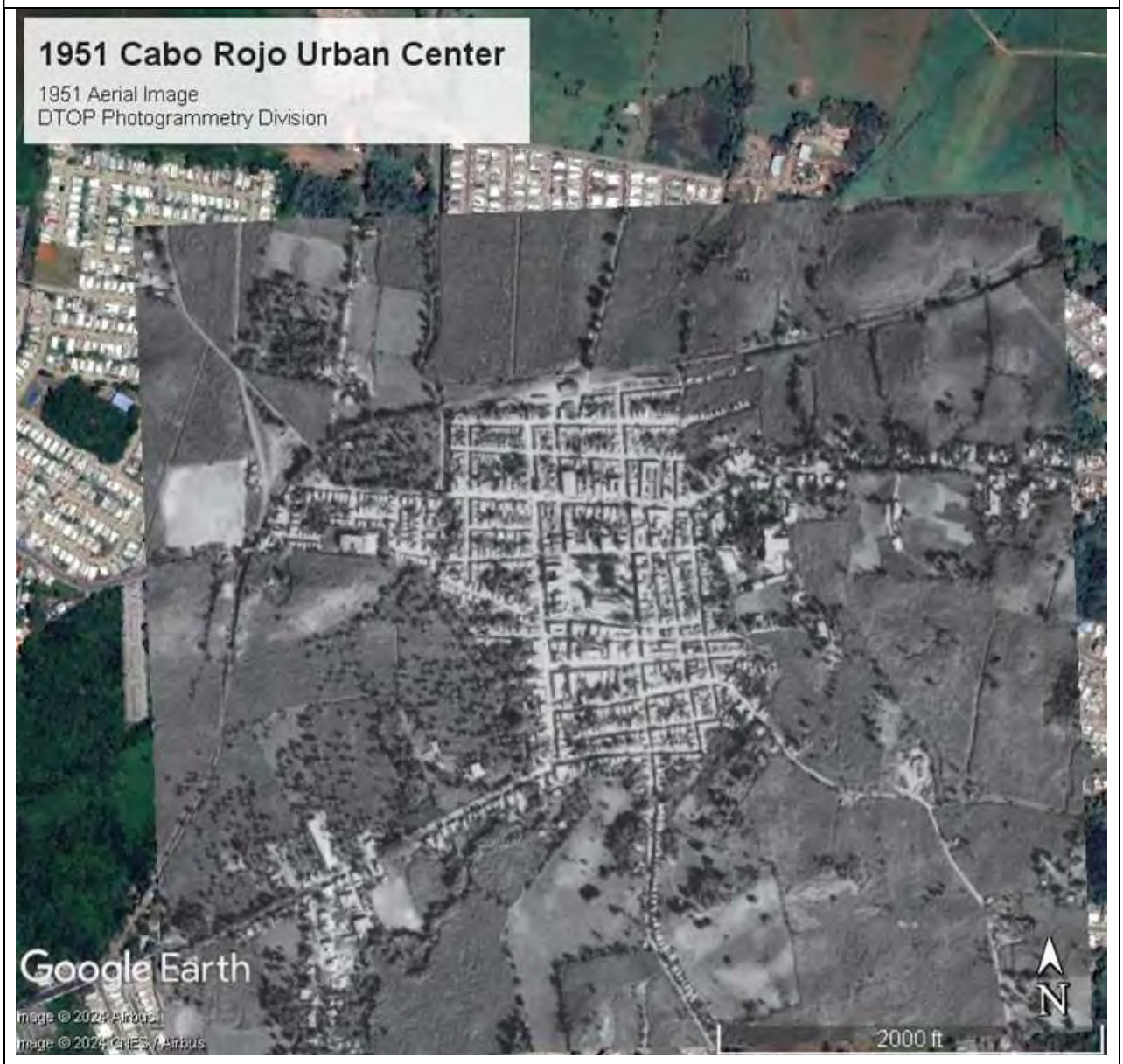
Description: The image above was sourced from the DTOP Photogrammetry Division and overlayed using Google Earth.

Project Location Overlay over 1951 DTOP Aerial Image



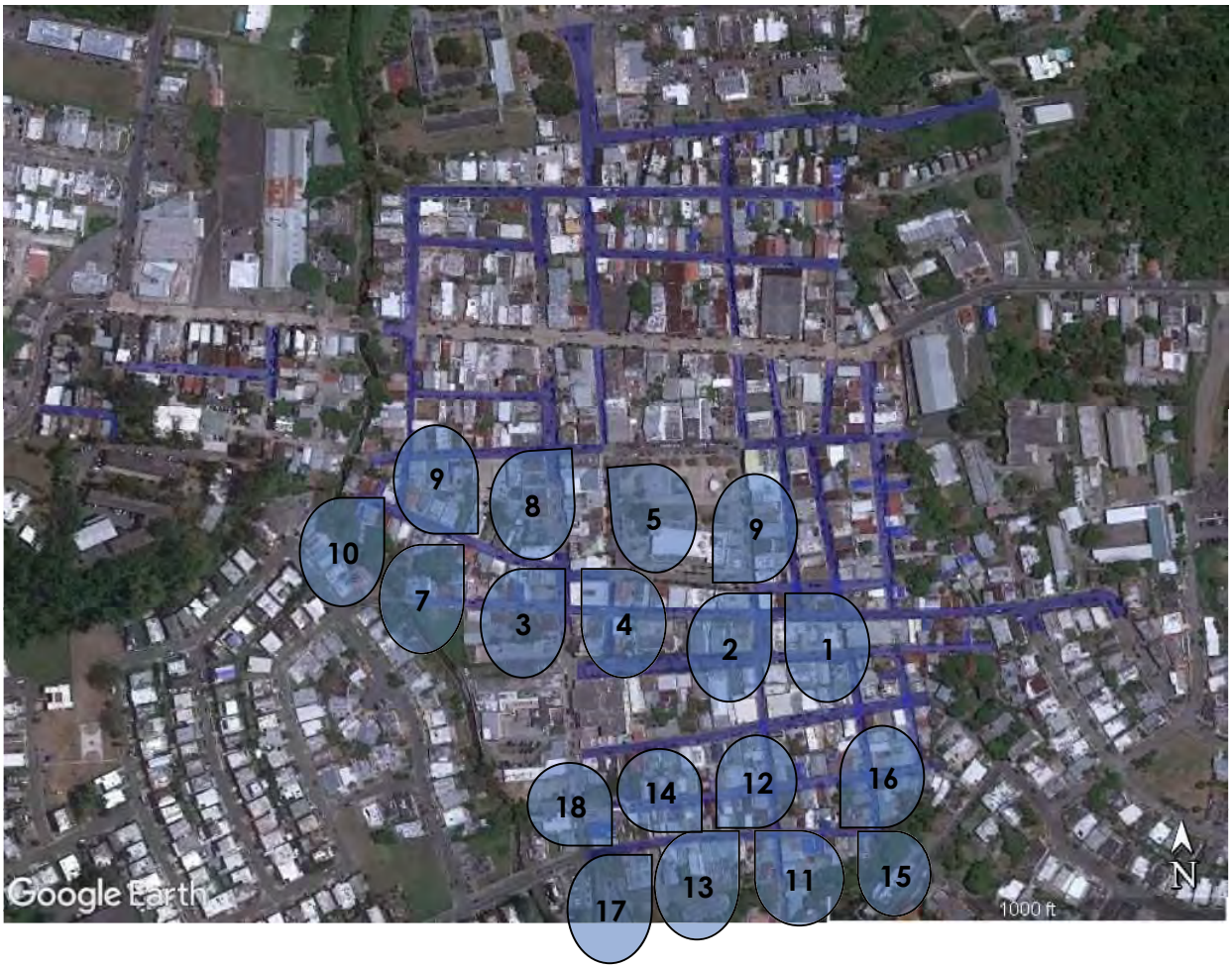
Description: The image above was sourced from the DTOP Photogrammetry Division and overlayed using Google Earth.

1951 Cabo Rojo Urban Center Aerial Image



Description: The image above was sourced from the DTOP Photogrammetry Division presented using Google Earth without the current project Overlay.

Photograph Key



Description: The photo key depicts the locations and orientations of the principle existing surroundings captured along specific streets to represent the state of need and historical character of the corridor. The set of photographs provides street-level views of existing conditions along the avenues within the project area to visually

Photograph Key 1

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Photograph Key 2

Description: The photo key depicts the locations and orientations of the principle existing surroundings captured along specific streets to represent the state of need and historical character of the corridor. The set of photographs provides street-level views of existing conditions along the avenues within the project area to visually

Photograph Key 3

Description: The photo key depicts the locations and orientations of the principle existing surroundings captured along specific streets to represent the state of need and historical character of the corridor. The set of photographs provides street-level views of existing conditions along the avenues within the project area to visually

Photo #:01	**Description (include direction): Muñoz Rivera Street- View from North to South**
Date: 06/Feb/23	

Photo #:02	**Description (include direction): Muñoz Rivera Street- View from North to South**
Date: 06/Feb/23	

Photo #:03	**Description (include direction): Muñoz Rivera Street- View from North to South**
Date: 06/Feb/23	

Photo #:04	**Description (include direction): Muñoz Rivera Street- View from North to South**
Date: 06/Feb/23	

Photo #:05	**Description (include direction): Muñoz Rivera Street- View from North to South**
Date: 06/Feb/23	

Photo #:06	**Description (include direction): Muñoz Rivera Street- View from North to South**
Date: 06/Feb/23	

Photo #:07	**Description (include direction): Muñoz Rivera Street- View from North to South**
Date:	

Photo #:8	**Description (include direction): Muñoz Rivera Street- View from North to South**
Date: 06/Feb/23	

Photo #:9	**Description (include direction): Manuel F. Rossy Street- View from East to West**
Date:06/Feb/23	

Photo #:10	**Description (include direction): Manuel F. Rossy Street- View from East to West**
Date: 06/Feb/23	

Photo #:11	**Description (include direction): Manuel F. Rossy Street- View from East to West**
Date: 06/Feb/23	

Photo #:12	**Description (include direction): Manuel F. Rossy Street- View from East to West**
Date: 06/Feb/23	

Photo #:13 **Date: 06/Feb/23**	**Description (include direction): Manuel F. Rossy Street- View from East to West**

Photo #:14 **Date: 06/Feb/23**	**Description (include direction): Manuel F. Rossy Street- View from East to West**

Photo #:15	**Description (include direction): Manuel F. Rossy Street- View from East to West**
Date: 06/Feb/23	

Photo #:16	**Description (include direction): Manuel F. Rossy Street- View from East to West**
Date: 06/Feb/23	

Photo #:17	**Description (include direction): Road 103 Intersection with Road 308-View from North to South**
Date: 06/Feb/23	

Photo #: 18	**Description (include direction): Road 103 Intersection with Road 308-View from North to South**
Date: 06/Feb/23	

Photo #: 19 **Date: 06/Feb/23**	**Description (include direction): Road 103 Intersection with Road 308- View from North to South**

Photo #: 20 **Date: 06/Feb/23**	**Description (include direction): Road 103 Intersection with Road 308-View wooden residence**

Photo #: 21 **Date: 06/Feb/23**	**Description (include direction): Road 103 Intersection with Road 308-North to South**

Photo #: 22 **Date: 06/Feb/23**	**Description (include direction): Road 103 Intersection with Road 308-View concrete residence**

Photo #: 23	**Description (include direction): Road 308- View from East to West**
Date: 06/Feb/23	

Photo #: 24	**Description (include direction): Road 308- View from East to West**
Date: 06/Feb/23	

Photo #: 25	**Description (include direction): Road 308- View from East to West**
Date: 06/Feb/23	

Photo #: 26	**Description (include direction): Road 308- View from East to West**
Date: 06/Feb/23	

Photo #: 27	**Description (include direction): Road 308- View from East to West**
Date: 06/Feb/23	

Photo #: 28	**Description (include direction): Road 308- View from East to West**
Date: 06/Feb/23	

Photo #: 29	**Description (include direction): Pueblo Nuevo Street- View from East to West**
Date: 06/Feb/23	

Photo #: 30	**Description (include direction): Pueblo Nuevo Street- View from East to West**
Date: 06/Feb/23	

Photo #: 31	**Description (include direction): Pueblo Nuevo Street- View from East to West**
Date: 06/Feb/23	

Photo #: 32	**Description (include direction): Pueblo Nuevo Street- View from East to West**
Date: 06/Feb/23	

Photo #: 33	**Description (include direction): Pueblo Nuevo Street- View from East to West**
Date: 06/Feb/23	

Photo #: 34	**Description (include direction): Pueblo Nuevo Street- View from East to West**
Date: 06/Feb/23	

Photo #: 35	**Description (include direction): Pueblo Nuevo Street- View from East to West**
Date: 06/Feb/23	

Photo #: 36	**Description (include direction): Pueblo Nuevo Street- View from East to West**
Date: 06/Feb/23	

Photo #: 37	**Description (include direction): Pueblo Nuevo Street- View from East to West**
Date: 06/Feb/23	

Photo #: 38	**Description (include direction): Angel Franco Street- View from South to North**
Date: 06/Feb/23	

Photo #: 39	**Description (include direction): José de Diego Street- View from East to West**
Date: 06/Feb/23	

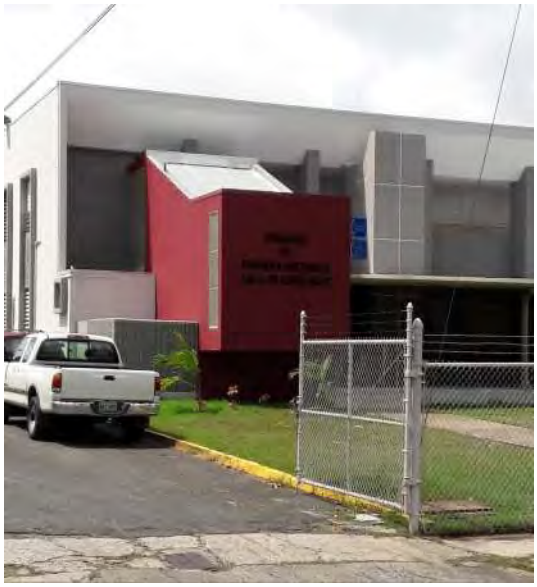

Photo #: 40	**Description (include direction): José de Diego Street- View from East to West**

Photo #: 41	**Description (include direction): José de Diego Street- View from East to West**
Date: 06/Feb/23	

Photo #: 42	**Description (include direction): José de Diego Street- View from East to West**

Photo #: 43	**Description (include direction): Dr. Henna Street- View from West to East**
Date: 06/Feb/23	

Photo #: 44	**Description (include direction): Dr. Henna Street- View from West to East**

Photo #: 45 **Date: 06/Feb/23**	**Description (include direction): PR-102 Street – View of Plaza del Mercado from West to East**

Photo #: 46	**Description (include direction): PR-102 Street - View of historical structures from West to East**

Photo #: 47	**Description (include direction): PR-102 Street – View of historical structures from West to East**
Date: 06/Feb/23	

Photo #: 48	**Description (include direction): PR-102 Street – Commerce. View from West to East**

PR-CRP-000845

Rehabilitación de la Infrastructura del Centro Urbano Project

Cabo Rojo, Puerto Rico

100% Design Drawings

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

MUNICIPIO AUTONOMO DE CABO ROJO

PUERTO RICO

100% DESIGN DRAWINGS

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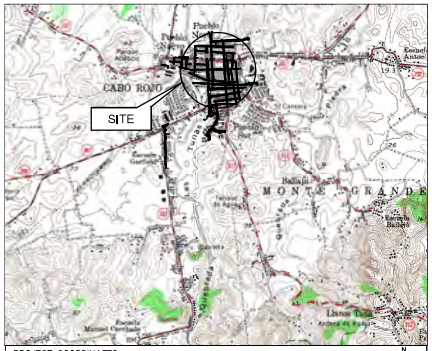

PROJECT COORDINATES:
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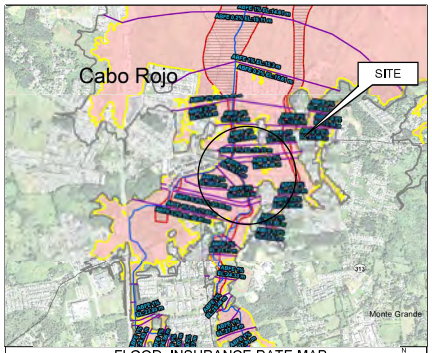
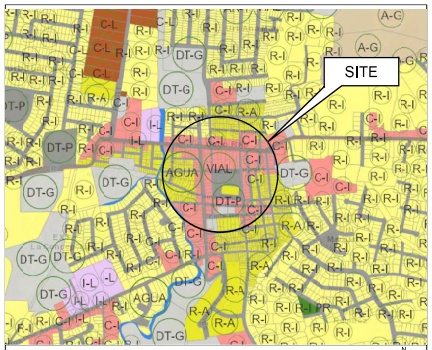
LONG: –67.148738

LOCATION PLAN
SCALE: 1:20,000



FLOOD INSURANCE RATE MAP
PANEL NUMBER: 72000C1535J
(LATEST REVISION(ABFE) – MAY/2018)



PROJECT COORDINATES:
LAT: 18.087829
LONG: –67.148738

CALIFICATION MAP
SCALE: NTS

OWNER

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PROJECT INFORMATION

PR-CRP-000845
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CABO ROJO PUERTO RICO

REVISIONS

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4	100% DESIGN DEVELOPMENT	08/04/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

TITLE SHEET, INDEX, LOCATION PLAN, FLOOD MAP & CALIFICATION

SHEET ID

T000

7/8/2020 3:15:46 PM

GENERAL SITE PLAN
SCALE: 1:1,250

5 0 10 20 50 80
SCALE: 1:1,250

7/8/2020 3:15:46 PM

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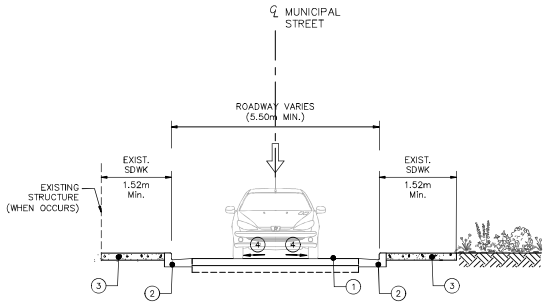
DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

GENERAL SITE PLAN

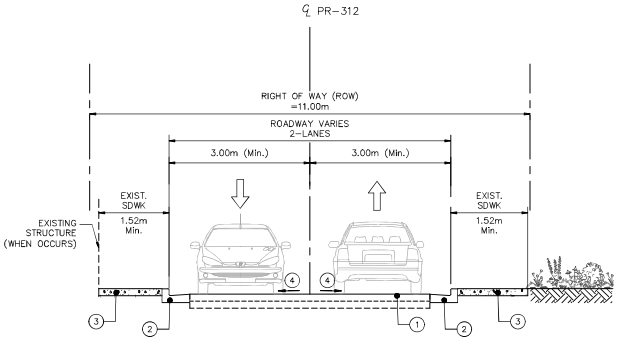
SHEET ID

C001



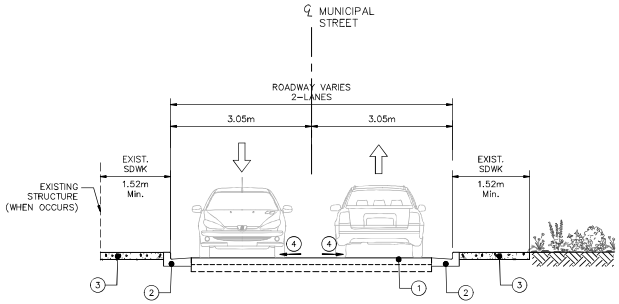
TYPICAL SECTION

(TYPICAL SECTION FOR MUNICIPAL STREETS – ONE WAY LANE)



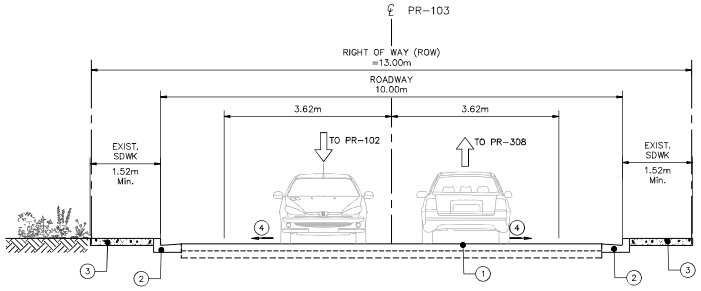
TYPICAL SECTION

(TYPICAL SECTION FOR CALLE MARIANO QUIÑONES (PR-312)



TYPICAL SECTION

(TYPICAL SECTION FOR MUNICIPAL STREETS – TWO-WAY LANES)



TYPICAL SECTION

PR-103, (SALVADOR BRAU STREET)

NOTES:

1. RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT (PRHTA SPEC. 501) SEE DETAILS ON DWG. C700.
2. RECONSTRUCTION OF CONCRETE SIDEWALK (SEE DETAILS ON DWG. C701)
3. RECONSTRUCTION OF CONCRETE CURB AND GUTTER (SEE DETAILS ON DWG. C700)
4. ROAD SLOPE 2% MAXIMUM FROM CENTER TOWARDS CONCRETE GUTTER.

GRAPHIC SCALE= 1:50

0 1 2 3 4

7/6/2020 3:15:46 PM

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DATE ISSUED:	03/20/23
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

TYPICAL SECTIONS

SHEET ID

C002

N

LAYOUT PLAN

SCALE: 1:200

GENERAL SITE NOTES:

1. ALL DIMENSIONS AND ELEVATIONS ARE EXPRESSED IN METERS, UNLESS OTHERWISE NOTED.
2. AS-BUILT PLAN PREPARED BY LICENCED SURVEYOR JOSE POZO. AS-BUILT WAS COMPLEMENTED BY USING A DRONE PHOTOGRAPH OF THE SELECTED STREETS IN CABO ROJO.
3. REFER TO LAYOUT PLANS FOR LOCATION OF REPAIRS AND PROPOSED WORKS.
4. REFER TO MOT PLANS FOR MAINTENANCE OF TRAFFIC TYPICAL APPLICATIONS, NOTES AND DETAILS.
5. REFER TO ELECTRICAL PLANS FOR RELOCATION OF EXISTING LIGHTING POLES AND/OR NEW LIGHTING POLES AND DETAILS.
6. DEMOLITION OF CONCRETE PAVEMENT AND COLD MILLING AS PER PRHTA STANDARD SPECIFICATIONS (SPEC. 503 – REMOVAL AND REPLACEMENT OF PORTLAND CEMENT CONCRETE PAVEMENT, AND SPEC.403-COLD MILLING OF BITUMINOUS CONCRETE PAVEMENT).
7. AFTER COMPLETION OF CONCRETE PAVEMENT REPLACEMENT AND SIDEWALKS RECONSTRUCTION WORKS, CONTRACTOR SHALL CLEANED AND PRESSURE WASHED ALL THE SIDEWALKS (EXISTING AND NEW) WITHIN THE PROJECT AREA (THIS INCLUDES FROM THE BEGINNING AND END OF EACH STREETS INCLUDED ON THIS PROJECT, AT BOTH SIDES OF THE STREET).

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
R-PCCP	REMOVAL AND RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT AND REPLACEMENT OF AGGREGATE BASE COURDE (PRHTA SPEC.503) (SEE DETAILS ON DWG C700)	R-CG	RECONSTRUCTION OF CONCRETE GUTTER (PRHTA SPEC.609)(SEE DETAIL ON DWG. C700)	N-CCD	RECONSTRUCTION OF EXISTING CURB CUT DRIVEWAY (SPEC. 608) (SEE DETAIL ON DWG. C701)	N-PCS	NEW PEDESTRIAN CROSSING SYMBOL (SPEC. 618) (SEE DETAIL ON DWG. C703)
R-CS	RECONSTRUCTION OF CONCRETE SIDEWALK (PRHTA SPEC.608) (SEE DETAIL ON DWG. C701)	REA/R-CP	REMOVAL OF ASPHALT OVERLAY/ RECONSTRUCTION OF CONCRETE PAVEMENT (SPECS. 503 AND 403) (SEE DETAIL ON DWG. C700)	N-HCR	DEMOLITION OF EXISTING SIDEWALK/NEW HANDICAP CONCRETE RAMP (SEC 608)(HC RAMP TYPES AND TYPICAL DETAILS ARE INCLUDED ON DWG. C701)	M-A	MANHOLE ADJUSTMENTS (TOP OF MH TO BE RESET TO MATCH EXISTING GRADE) (SPEC 634)(SEE DETAILS AND DWG. C702)
R-CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R-EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

2 0 5 10 15m

SCALE: 1:200

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DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

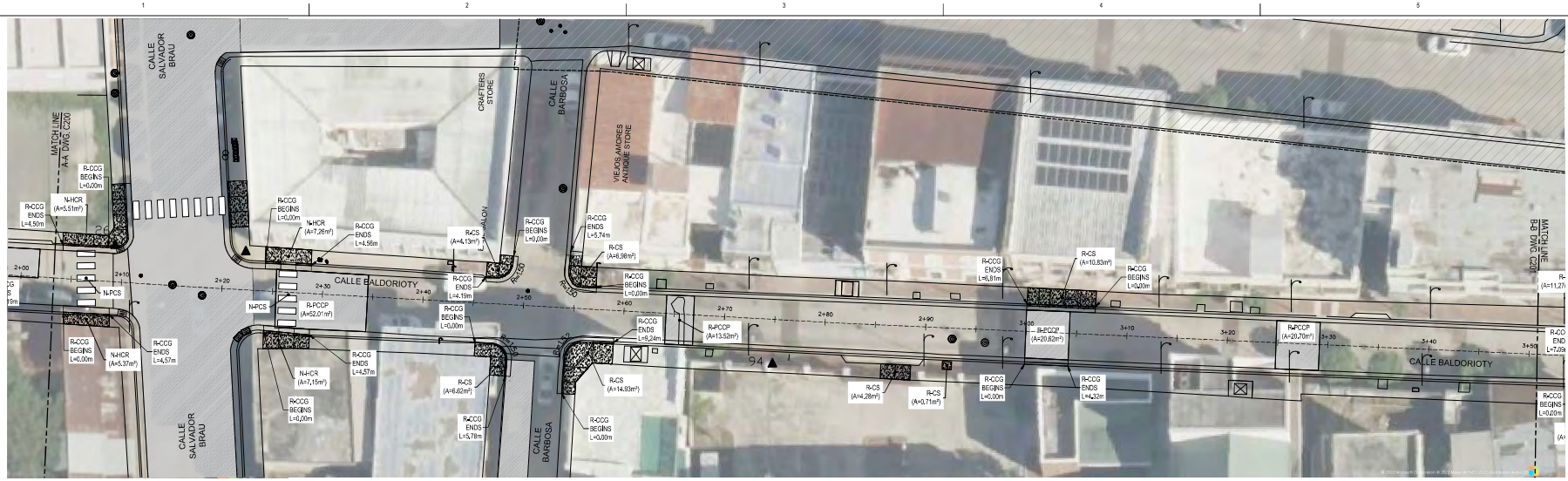
SHEET TITLE

LAYOUT PLAN
CALLE
BALDORIOTY

SHEET ID

C200

7/6/2023 3:15:46 PM



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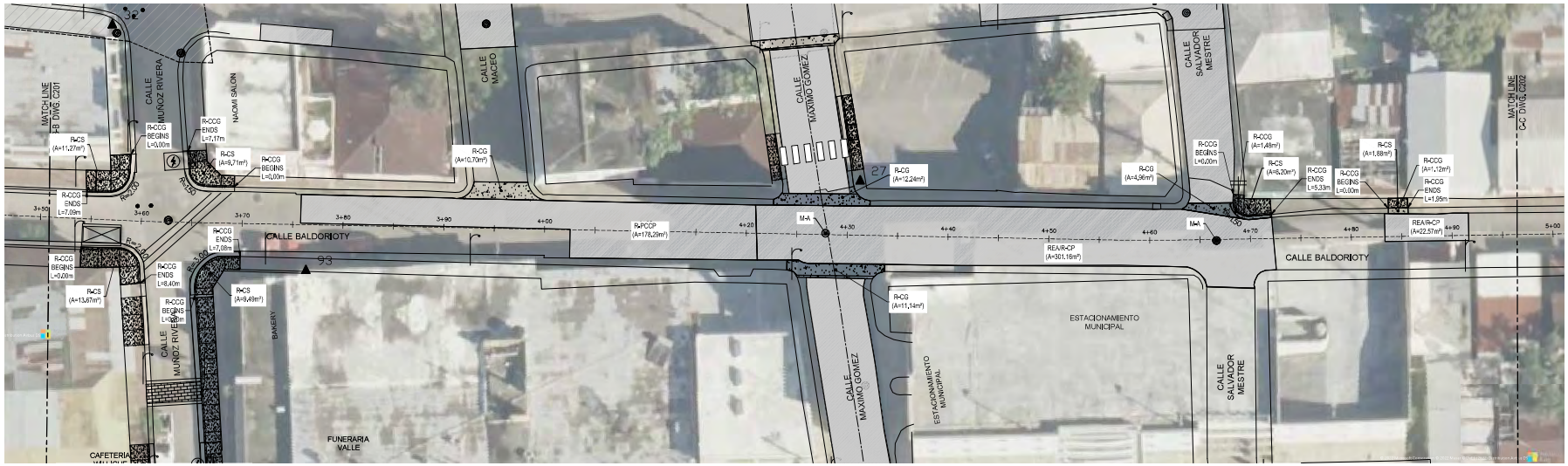
LAYOUT PLAN
SCALE: 1:200



N

LAYOUT PLAN
SCALE: 1:200

LEGEND:

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NOTE:

1. FOR LEGENDS AND NOTES, REFER TO DWG. C200.

2 0 5 10 15m

SCALE: 1:200

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	03/31/23
3	90% DESIGN DEVELOPMENT	05/22/23
4	100% DESIGN DEVELOPMENT	08/04/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

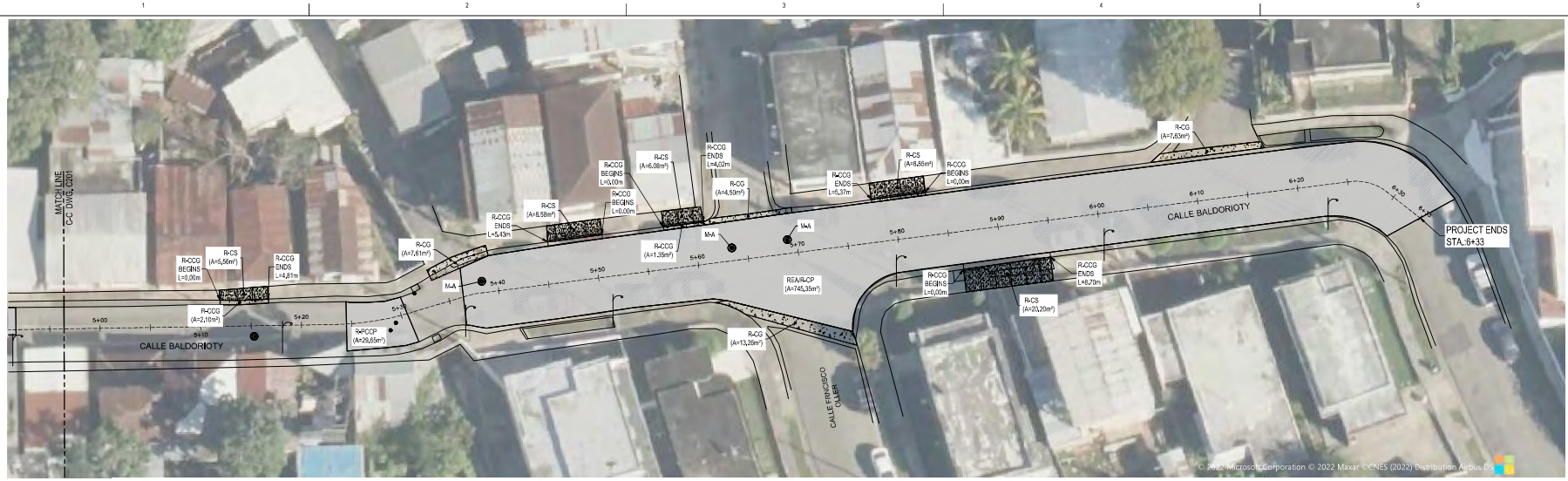
SHEET TITLE

LAYOUT PLAN
CALLE
BALDORIOTY

SHEET ID

C201

7/6/2020 3:15:46 PM



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LAYOUT PLAN

SCALE: 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
R-PCCP	REMOVAL AND RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT AND REPLACEMENT OF AGGREGATE BASE COURDE (PRHTA SPEC.503) (SEE DETAILS ON DWG C700)	R-CG	RECONSTRUCTION OF CONCRETE GUTTER (PRHTA SPEC.609)(SEE DETAIL ON DWG. C700)	N-CCD	RECONSTRUCTION OF EXISTING CURB CUT DRIVEWAY (SPEC. 608) (SEE DETAIL ON DWG. C701)	N-PCS	NEW PEDESTRIAN CROSSING SYMBOL (SPEC. 618) (SEE DETAIL ON DWG. C703)
R-CS	RECONSTRUCTION OF CONCRETE SIDEWALK (PRHTA SPEC.608) (SEE DETAIL ON DWG. C701)	REA/R-CP	REMOVAL OF ASPHALT OVERLAY/ RECONSTRUCTION OF CONCRETE PAVEMENT (SPECS. 503 AND 403) (SEE DETAIL ON DWG. C700)	N-HCR	DEMOLITION OF EXISTING SIDEWALK/NEW HANDICAP CONCRETE RAMP (SEC 608)(HC RAMP TYPES AND TYPICAL DETAILS ARE INCLUDED ON DWG. C701)	M-A	MANHOLE ADJUSTMENTS (TOP OF MH TO BE RESET TO MATCH EXISTING GRADE) (SPEC 634)(SEE DETAILS AND DWG. C702)
R-CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R-EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

NOTE:

1. FOR LEGENDS AND NOTES, REFER TO DWG. C200.

2 0 5 10 15m

SCALE: 1:200

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DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

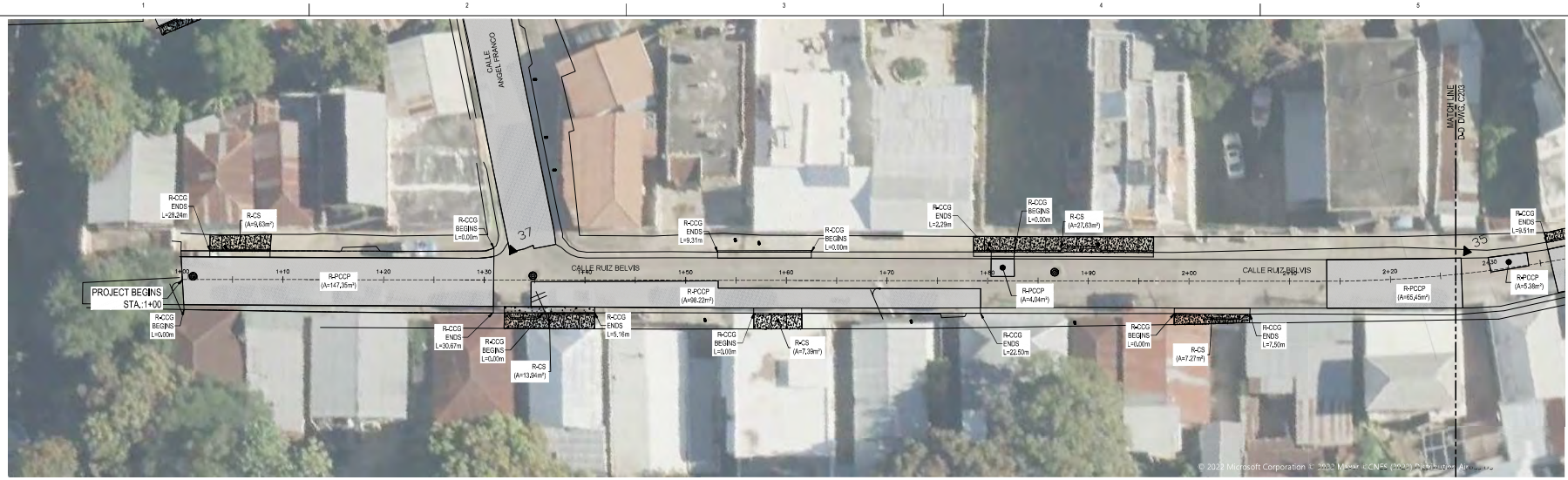
SHEET TITLE

LAYOUT PLAN
CALLE
BALDORIOTY

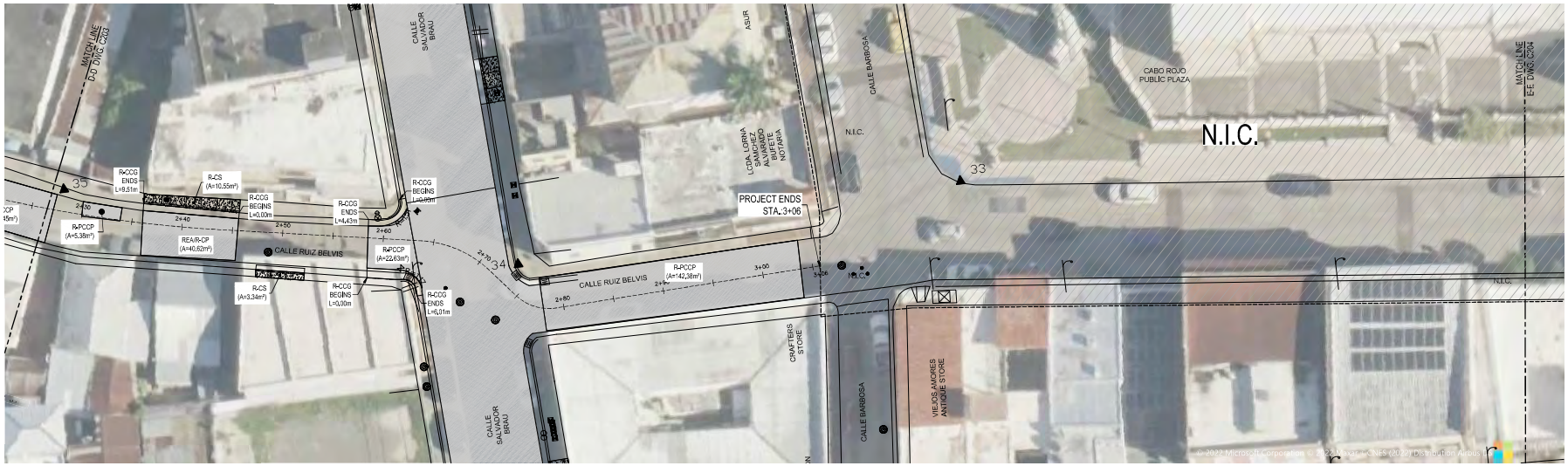
SHEET ID

C202

7/6/2023 3:15:46 PM



LAYOUT PLAN
SCALE: 1:200



LAYOUT PLAN
SCALE: 1:200

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2 0 5 10 15m

SCALE: 1:200

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DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE RUIZ
BELVIS

SHEET ID

C203

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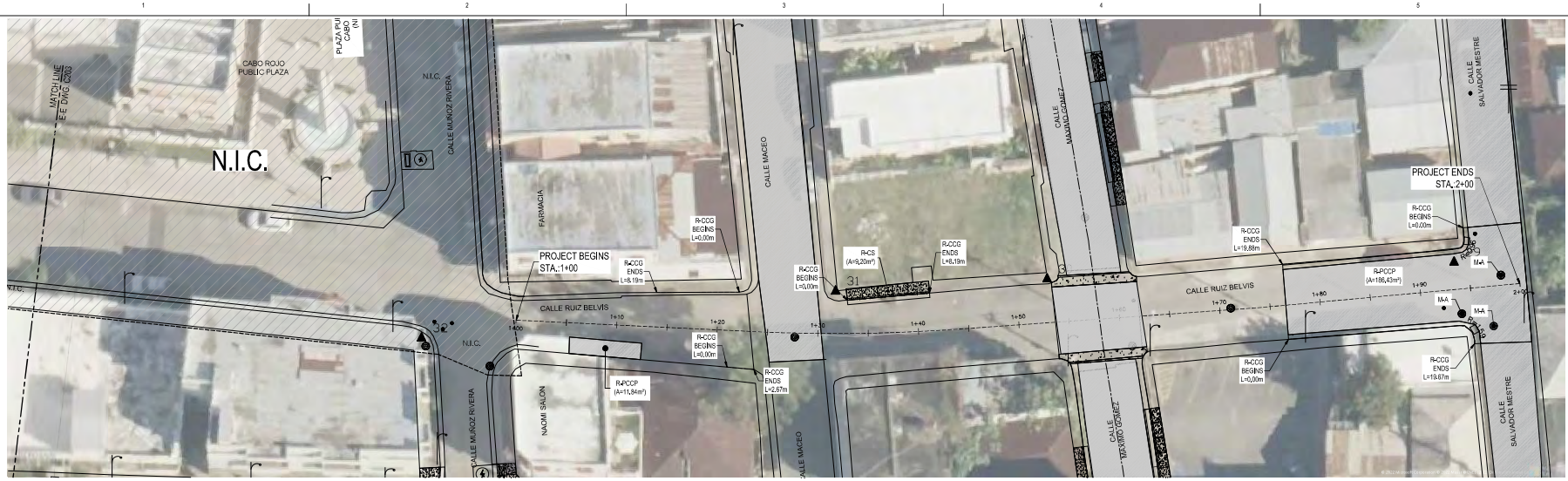

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LAYOUT PLAN
SCALE: 1:200

LEGEND:

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NOTE:

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2 0 5 10 15m

SCALE: 1:200

7/6/2020 3:15:46 PM

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REVISIONS

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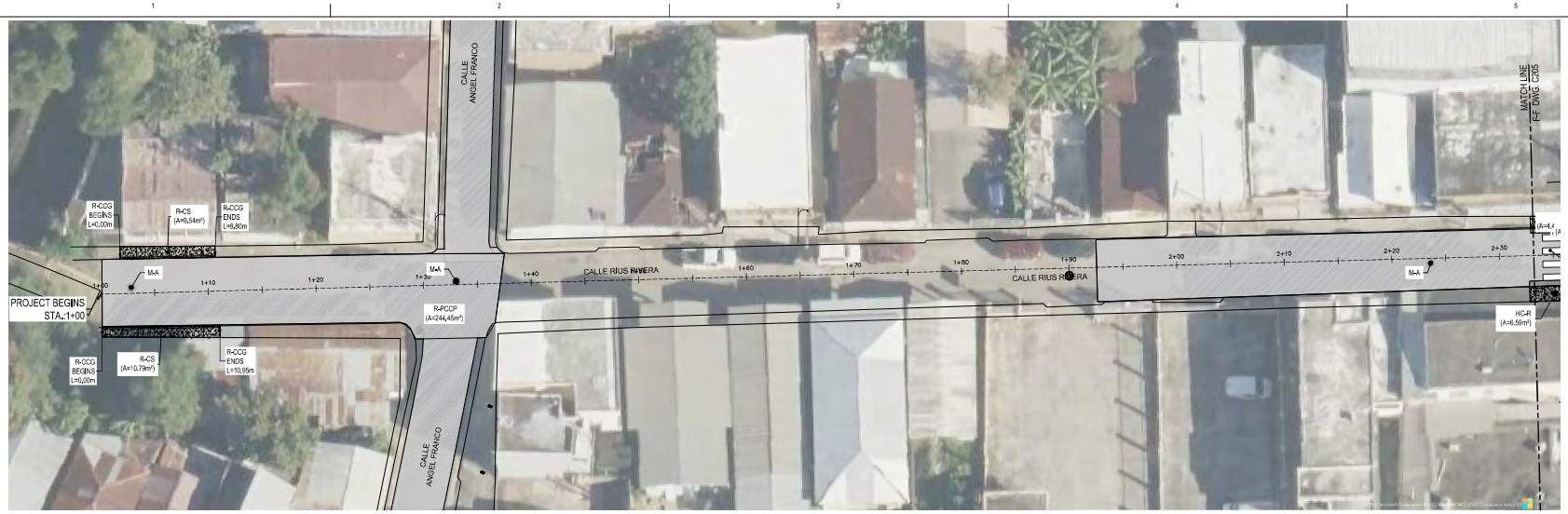
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE RUIZ
BELVIS

SHEET ID

C204



N

LAYOUT PLAN
SCALE: 1:200

N

LAYOUT PLAN
SCALE: 1:200

LEGEND:

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NOTE:

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2 0 5 10 15m

SCALE: 1:200

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DESIGNED BY:	LMR
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SHEET TITLE

LAYOUT PLAN
CALLE RIUS
RIVERA

SHEET ID

C205

7/6/2023 3:15:46 PM

N

LAYOUT PLAN

SCALE: 1:200

LEGEND:

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CONSULTANT

SEAL

YO, LUZ M. RODRIGUEZ TORRES, LIC.17504, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONÓ Y/O DISEÑÓ Y/O PREPARÓ ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS. TAMBIÉN CERTIFICO QUE ENTIENDO QUE DICHOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONJUNTO Y LAS DISPOSICIONES APLICABLES DE LOS REGLAMENTOS Y CÓDIGOS DE CONSTRUCCIÓN VIGENTES DE LAS AGENCIAS, JUNTAS REGLAMENTADORAS Y CORPORACIONES PÚBLICAS CON JURISDICCIÓN. CERTIFICO, ADEMÁS, QUE EN LA PREPARACIÓN DE ESTOS PLANOS Y ESPECIFICACIONES SE HA CUMPLIDO CABALMENTE CON LO DISPUESTO EN LA LEY NÚM. 14 DEL 8 DE ENERO DE 2004, SEGÚN ENMENDADA, CONOCIDA COMO LEY PARA LA INVERSIÓN POR LA CALIDAD EN PUERTO RICO Y CON LA LEY NÚM. 319 DEL 15 MAYO DE 1998 , SEGÚN ENMENDADA; LEY NÚM. 96 DEL 9 DE JULIO DE 1976, SEGÚN ENMENDADA, SEGÚN APLIQUE. RECONOZCO QUE CUALQUIER DECLARACIÓN FALSA O CALIFICACIONES DE LOS HECHOS QUE SE HAYA PROCEDIDO POR DESCONOCIMIENTO O POR NEGLIGENCIA YA SEA POR MÍ, MIS AGENTES O EMPLEADOS, O POR OTRAS PERSONAS CON MI CONOCIMIENTO, ME HACEN RESPONSABLE DE CUALQUIER ACCIÓN JUDICIAL Y DISCIPLINARIA POR LA CUAL

PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	03/31/23
3	90% DESIGN DEVELOPMENT	05/22/23
4	100% DESIGN DEVELOPMENT	08/04/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

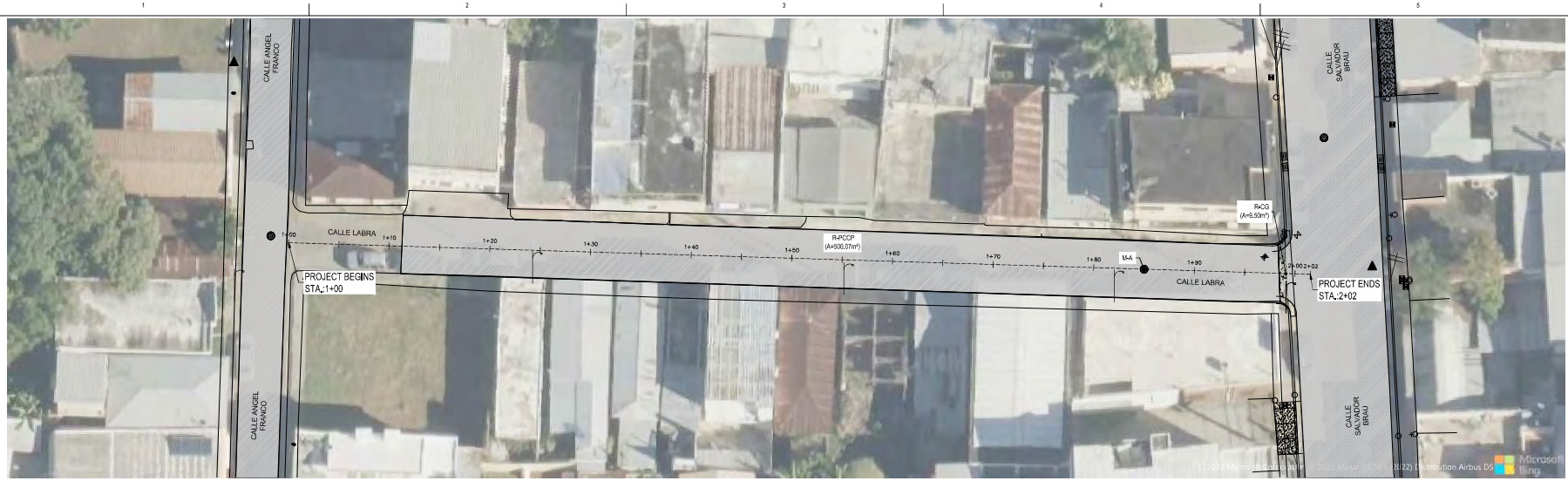
SHEET TITLE

LAYOUT PLAN
CALLE RIUS
RIVERA

SHEET ID

C206

7/6/2020 3:15:46 PM



N

LAYOUT PLAN

SCALE 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
R-PCCP	REMOVAL AND RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT AND REPLEACEMENT OF AGGREGATE BASE COURDE (PRHTA SPEC.503) (SEE DETAILS ON DWG C700)	R-CG	RECONSTRUCTION OF CONCRETE GUTTER (PRHTA SPEC.609)(SEE DETAIL ON DWG. C700)	N-CCD	RECONSTRUCTION OF EXISTING CURB CUT DRIVEWAY (SPEC. 608) (SEE DETAIL ON DWG. C701)	N-PCS	NEW PEDESTRIAN CROSSING SYMBOL (SPEC. 618) (SEE DETAIL ON DWG. C703)
R-CS	RECONSTRUCTION OF CONCRETE SIDEWALK (PRHTA SPEC.608) (SEE DETAIL ON DWG. C701)	REA/R-CP	REMOVAL OF ASPHALT OVERLAY/ RECONSTRUCTION OF CONCRETE PAVEMENT (SPECS. 503 AND 403) (SEE DETAIL ON DWG. C700)	N-HCR	DEMOLITION OF EXISTING SIDEWALK/NEW HANDICAP CONCRETE RAMP (SEC 608)(HC RAMP TYPES AND TYPICAL DETAILS ARE INCLUDED ON DWG. C701)	M-A	MANHOLE ADJUSTMENTS (TOP OF MH TO BE RESET TO MATCH EXISTING GRADE) (SPEC 634)(SEE DETAILS AND DWG. C702)
R-CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R-EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

NOTE:

1. FOR LEGENDS AND NOTES, REFER TO DWG. C200.

2 0 5 10 15m

SCALE: 1:200

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
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CABO ROJO PUERTO RICO

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DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

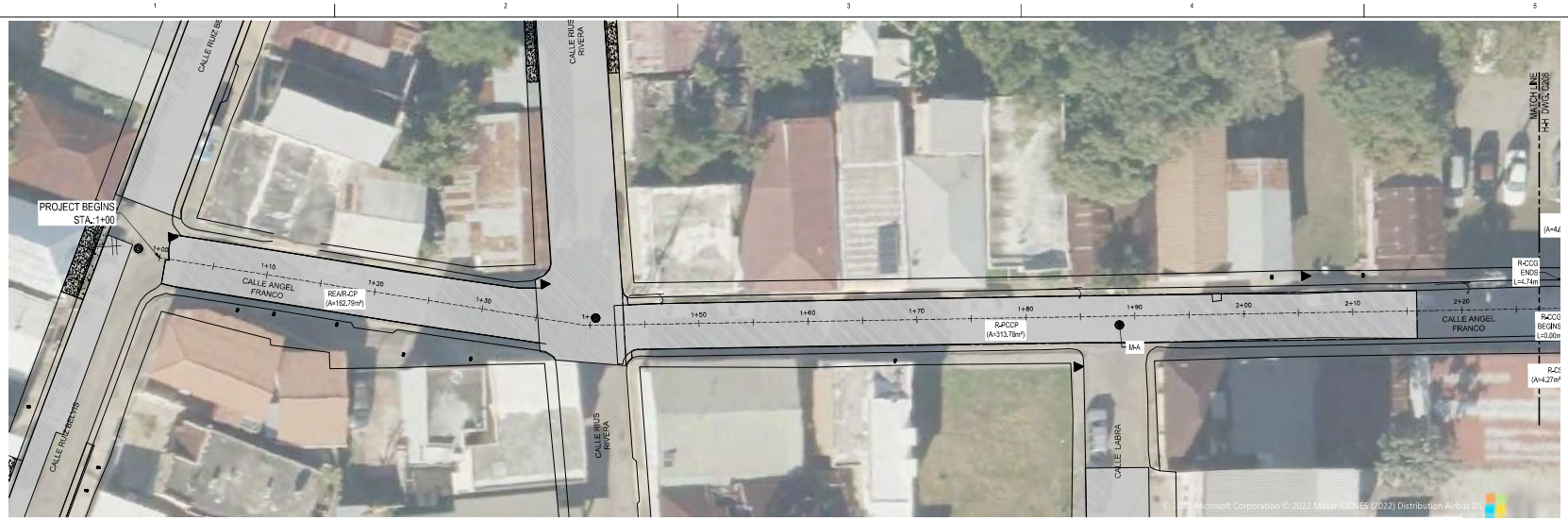
SHEET TITLE

LAYOUT PLAN
CALLE LABRA

SHEET ID

C207

7/6/2020 3:15:46 PM



LAYOUT PLAN
SCALE: 1:200

LAYOUT PLAN
SCALE: 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
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R-CS	RECONSTRUCTION OF CONCRETE SIDEWALK (PRHTA SPEC.608) (SEE DETAIL ON DWG. C701)	REA/R-CP	REMOVAL OF ASPHALT OVERLAY/ RECONSTRUCTION OF CONCRETE PAVEMENT (SPECS. 503 AND 403) (SEE DETAIL ON DWG. C700)	N-HCR	DEMOLITION OF EXISTING SIDEWALK/NEW HANDICAP CONCRETE RAMP (SEC 608)(HC RAMP TYPES AND TYPICAL DETAILS ARE INCLUDED ON DWG. C701)	M-A	MANHOLE ADJUSTMENTS (TOP OF MH TO BE RESET TO MATCH EXISTING GRADE) (SPEC 634)(SEE DETAILS AND DWG. C702)
R-CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R-EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

NOTE:

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2 0 5 10 15m

SCALE: 1:200

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
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CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
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DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

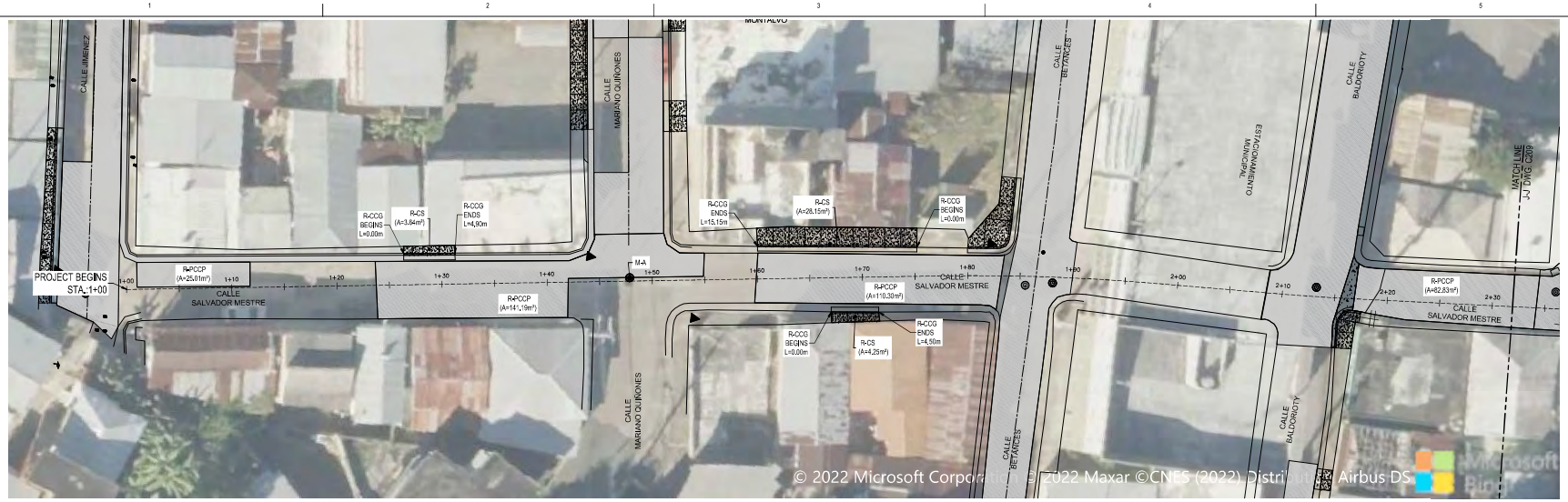
SHEET TITLE

LAYOUT PLAN
CALLE ANGEL
FRANCO

SHEET ID

C208

7/6/2023 3:15:46 PM



LAYOUT PLAN
SCALE: 1:200

LAYOUT PLAN
SCALE: 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
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NOTE:

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2 0 5 10 15m
SCALE: 1:200

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

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DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE SALVADOR
MESTRE

SHEET ID

C209

7/6/2023 3:15:46 PM

LAYOUT PLAN
SCALE: 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
R–PCCP	REMOVAL AND RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT AND REPLEACEMENT OF AGGREGATE BASE COURDE (PRHTA SPEC.503) (SEE DETAILS ON DWG C700)	R–CG	RECONSTRUCTION OF CONCRETE GUTTER (PRHTA SPEC.609)(SEE DETAIL ON DWG. C700)	N–CCD	RECONSTRUCTION OF EXISTING CURB CUT DRIVEWAY (SPEC. 608) (SEE DETAIL ON DWG. C701)	N–PCS	NEW PEDESTRIAN CROSSING SYMBOL (SPEC. 618) (SEE DETAIL ON DWG. C703)
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R–CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R–EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

NOTE:

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2 0 5 10 15m

SCALE: 1:200

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CABO ROJO PUERTO RICO

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DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

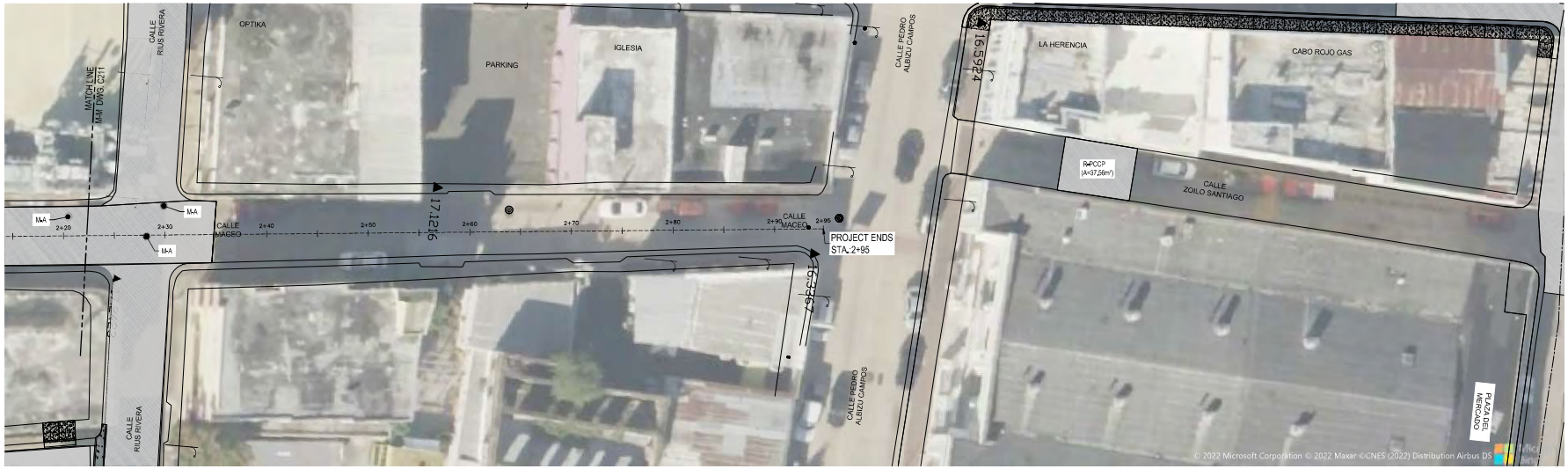
LAYOUT PLAN
CALLE SALVADOR MESTRE

SHEET ID

C210

7/6/2023 3:15:46 PM

LAYOUT PLAN
SCALE: 1:200



LAYOUT PLAN
SCALE: 1:200

LEGEND:

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2 0 5 10 15m
SCALE: 1:200

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YO, LUZ M. RODRIGUEZ TORRES, LIC.17504, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONÓ Y/O DISEÑÓ Y/O PREPARÓ ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS. TAMBIÉN CERTIFICO QUE ENTIENDO QUE DICHOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONJUNTO Y LAS DISPOSICIONES APLICABLES DE LOS REGLAMENTOS Y CÓDIGOS DE CONSTRUCCIÓN VIGENTES DE LAS AGENCIAS, JUNTAS REGLAMENTADORAS Y CORPORACIONES PÚBLICAS CON JURISDICCIÓN. CERTIFICO, ADEMÁS, QUE EN LA PREPARACIÓN DE ESTOS PLANOS Y ESPECIFICACIONES SE HA CUMPLIDO CABALMENTE CON LO DISPUESTO EN LA LEY NÚM. 14 DEL 8 DE ENERO DE 2004, SEGÚN ENMENDADA, CONOCIDA COMO LEY PARA LA INVERSIÓN POR LA INGENIERÍA PUERTORRIQUEÑA Y CON LA LEY NÚM. 319 DEL 15 MAYO DE 1998 , SEGÚN ENMENDADA. LEY NÚM. 84 DEL 9 DE JULIO DE 1976, SEGÚN ENMENDADA, SEGÚN APLIQUE. RECONOZCO QUE CUALQUIER DECLARACIÓN FALSA O CALIFICACIONES DE LOS HECHOS QUE SE HAYA PROCEDIDO POR DESCONOCIMIENTO O POR NEGLIGENCIA YA SEA POR MÍ, MIS AGENTES O EMPLEADOS, O POR OTRAS PERSONAS CON MI CONOCIMIENTO, ME HACEN RESPONSABLE DE CUALQUIER ACCIÓN JUDICIAL Y DISCIPLINARIA PERTINENTE.

PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	03/31/23
3	90% DESIGN DEVELOPMENT	05/22/23
4	100% DESIGN DEVELOPMENT	08/04/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLES ANTONIO
MACEO & ZOILO
SANTIAGO

SHEET ID

C211

7/6/2023 3:15:46 PM

N

LAYOUT PLAN
SCALE: 1:200

N

LAYOUT PLAN
SCALE: 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
R-PCCP	REMOVAL AND RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT AND REPLACEMENT OF AGGREGATE BASE COURDE (PRHTA SPEC.503) (SEE DETAILS ON DWG C700)	R-CG	RECONSTRUCTION OF CONCRETE GUTTER (PRHTA SPEC.609)(SEE DETAIL ON DWG. C700)	N-CCD	RECONSTRUCTION OF EXISTING CURB CUT DRIVEWAY (SPEC. 608) (SEE DETAIL ON DWG. C701)	N-PCS	NEW PEDESTRIAN CROSSING SYMBOL (SPEC. 618) (SEE DETAIL ON DWG. C703)
R-CS	RECONSTRUCTION OF CONCRETE SIDEWALK (PRHTA SPEC.608) (SEE DETAIL ON DWG. C701)	REA/R-CP	REMOVAL OF ASPHALT OVERLAY/ RECONSTRUCTION OF CONCRETE PAVEMENT (SPECS. 503 AND 403) (SEE DETAIL ON DWG. C700)	N-HCR	DEMOLITION OF EXISTING SIDEWALK/NEW HANDICAP CONCRETE RAMP (SEC 608)(HC RAMP TYPES AND TYPICAL DETAILS ARE INCLUDED ON DWG. C701)	M-A	MANHOLE ADJUSTMENTS (TOP OF MH TO BE RESET TO MATCH EXISTING GRADE) (SPEC 634)(SEE DETAILS AND DWG. C702)
R-CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R-EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

NOTE:

1. FOR LEGENDS AND NOTES, REFER TO DWG. C200.

2 0 5 10 15m

SCALE: 1:200

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
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REVISIONS

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DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE MANUEL
ROSSY

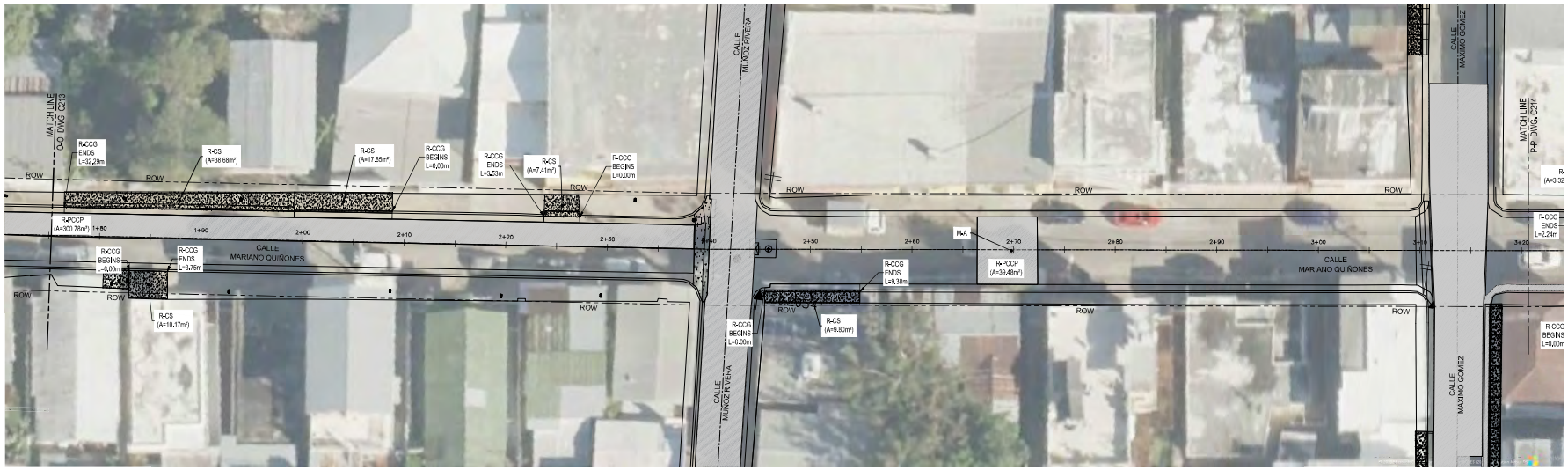
SHEET ID

C212

7/8/2020 3:15:46 PM

N

LAYOUT PLAN
SCALE: 1:200



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LAYOUT PLAN
SCALE: 1:200

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2 0 5 10 15m

SCALE: 1:200

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PR-CRP-000845
REHABILITACION
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CABO ROJO PUERTO RICO

REVISIONS

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DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

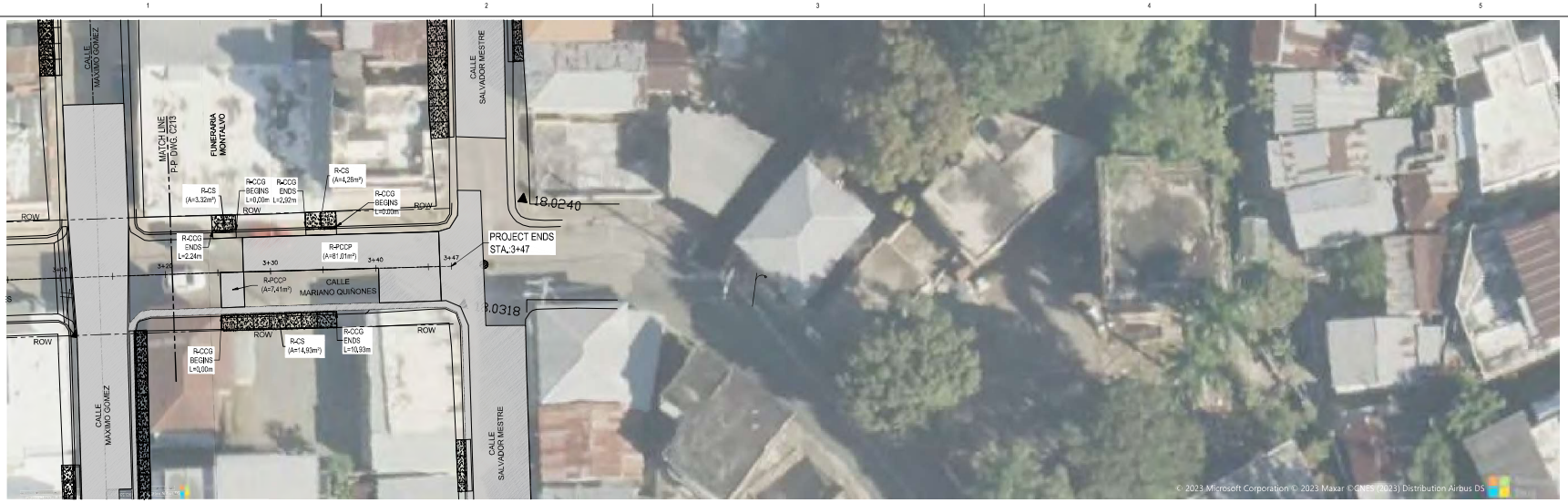
SHEET TITLE

LAYOUT PLAN
CALLE MARIANO
QUIÑONES

SHEET ID

C213

7/6/2023 3:15:46 PM



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LAYOUT PLAN
SCALE 1:200

LEGEND:

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NOTE:

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2 0 5 10 15m

SCALE: 1:200

7/8/2020 3:15:46 PM

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CABO ROJO PUERTO RICO

REVISIONS

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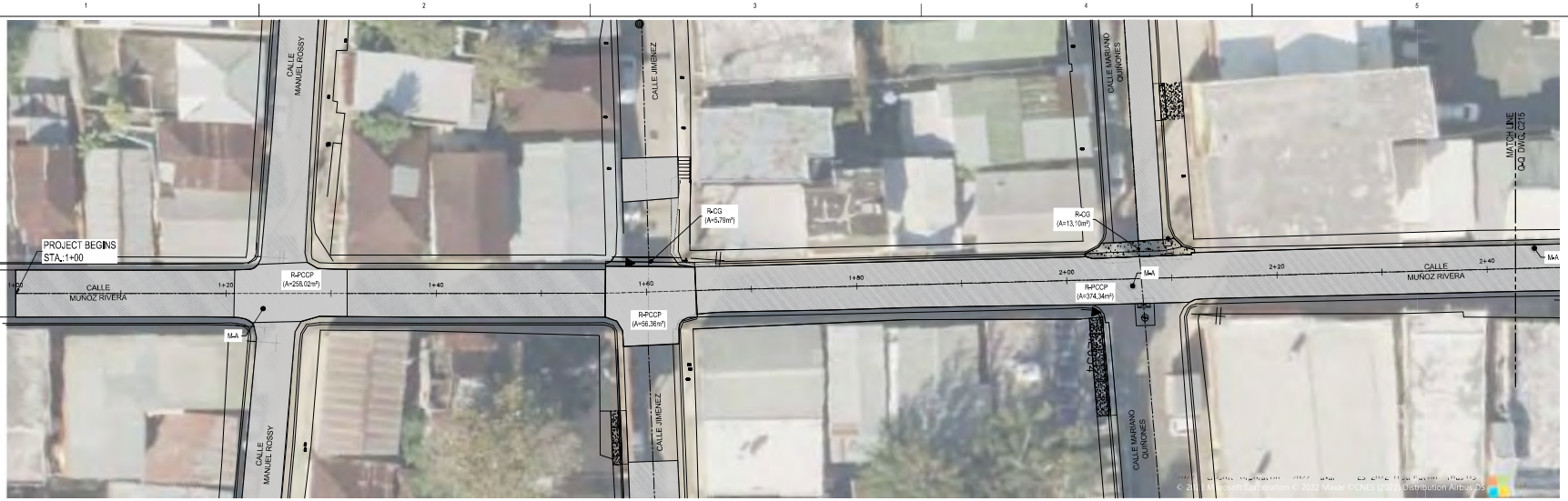
DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE MARIANO
QUIÑONES

SHEET ID

C214



LAYOUT PLAN
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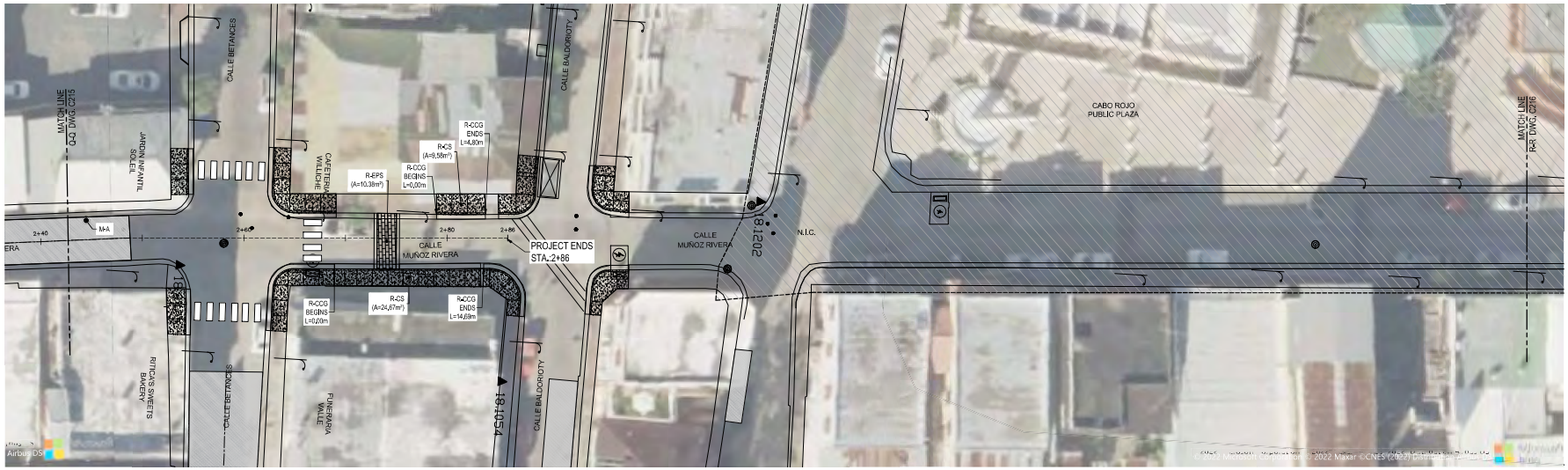

LAYOUT PLAN
SCALE: 1:200

LEGEND:

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SCALE: 1:200

7/8/2020 3:15:46 PM

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CABO ROJO PUERTO RICO

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DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

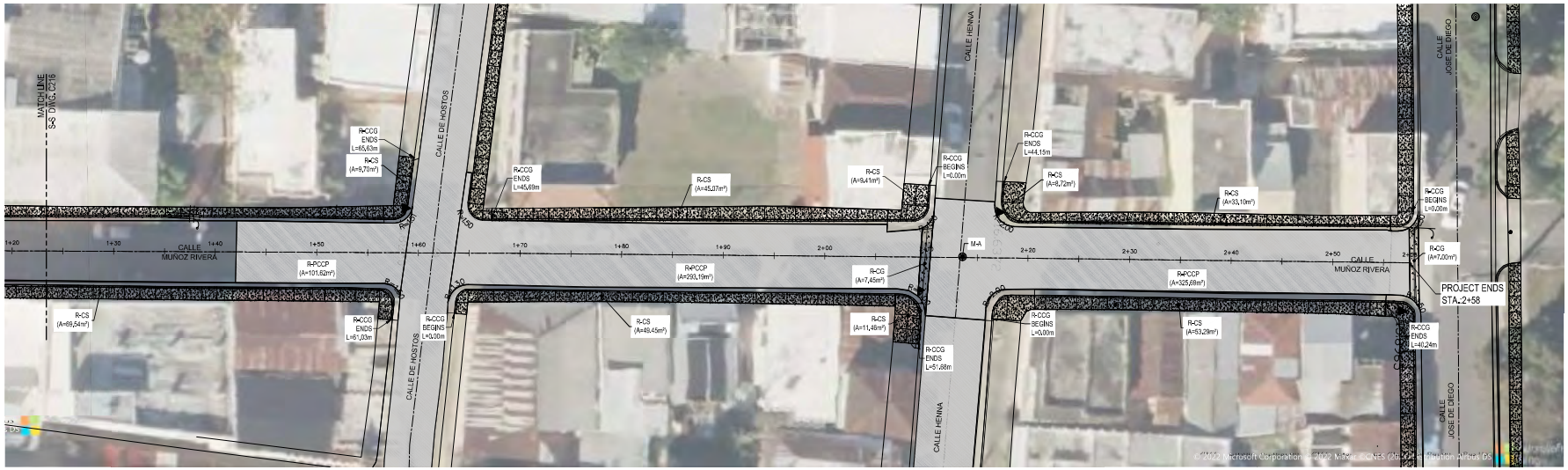
SHEET TITLE

LAYOUT PLAN
CALLE MUÑOZ
RIVERA

SHEET ID

C215

LAYOUT PLAN
SCALE: 1:200



LAYOUT PLAN
SCALE: 1:200

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	03/31/23
3	90% DESIGN DEVELOPMENT	05/22/23
4	100% DESIGN DEVELOPMENT	08/04/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

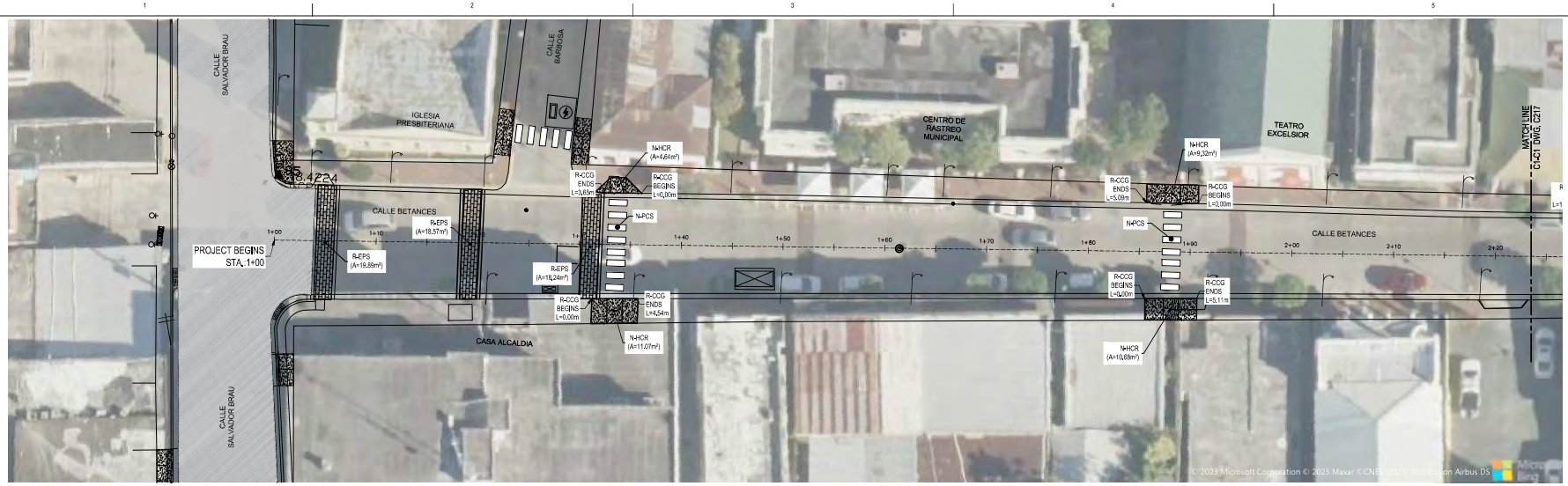
SHEET TITLE

LAYOUT PLAN
CALLE MUÑOZ
RIVERA

SHEET ID

C216

7/8/2020 3:15:46 PM



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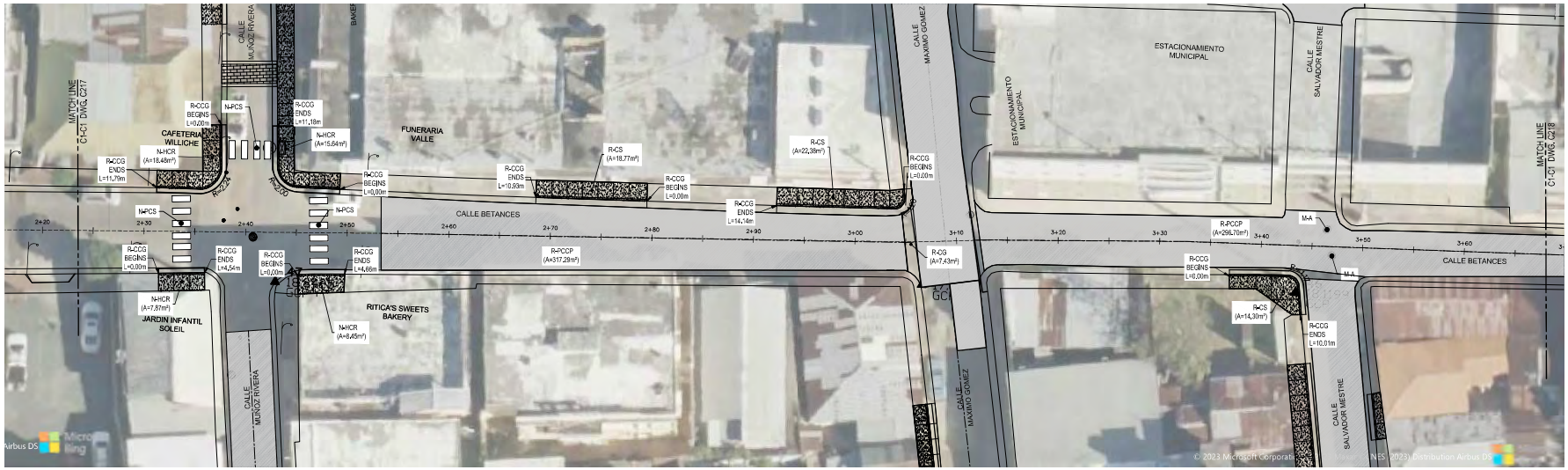

LAYOUT PLAN
SCALE: 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
R-PCCP	REMOVAL AND RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT AND REPLACEMENT OF AGGREGATE BASE COURDE (PRHTA SPEC.503) (SEE DETAILS ON DWG C700)	R-CG	RECONSTRUCTION OF CONCRETE GUTTER (PRHTA SPEC.609)(SEE DETAIL ON DWG. C700)	N-CCD	RECONSTRUCTION OF EXISTING CURB CUT DRIVEWAY (SPEC. 608) (SEE DETAIL ON DWG. C701)	N-PCS	NEW PEDESTRIAN CROSSING SYMBOL (SPEC. 618) (SEE DETAIL ON DWG. C703)
R-CS	RECONSTRUCTION OF CONCRETE SIDEWALK (PRHTA SPEC.608) (SEE DETAIL ON DWG. C701)	REA/R-CP	REMOVAL OF ASPHALT OVERLAY/ RECONSTRUCTION OF CONCRETE PAVEMENT (SPECS. 503 AND 403) (SEE DETAIL ON DWG. C700)	N-HCR	DEMOLITION OF EXISTING SIDEWALK/NEW HANDICAP CONCRETE RAMP (SEC 608)(HC RAMP TYPES AND TYPICAL DETAILS ARE INCLUDED ON DWG. C701)	M-A	MANHOLE ADJUSTMENTS (TOP OF MH TO BE RESET TO MATCH EXISTING GRADE) (SPEC 634)(SEE DETAILS AND DWG. C702)
R-CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R-EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

NOTE:

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SCALE: 1:200

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DESIGNED BY:	LMR
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SHEET TITLE

LAYOUT PLAN
CALLE BETANCES

SHEET ID

C217

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N

LAYOUT PLAN

SCALE 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
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NOTE:

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SCALE: 1:200

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DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE BETANCES

SHEET ID

C218

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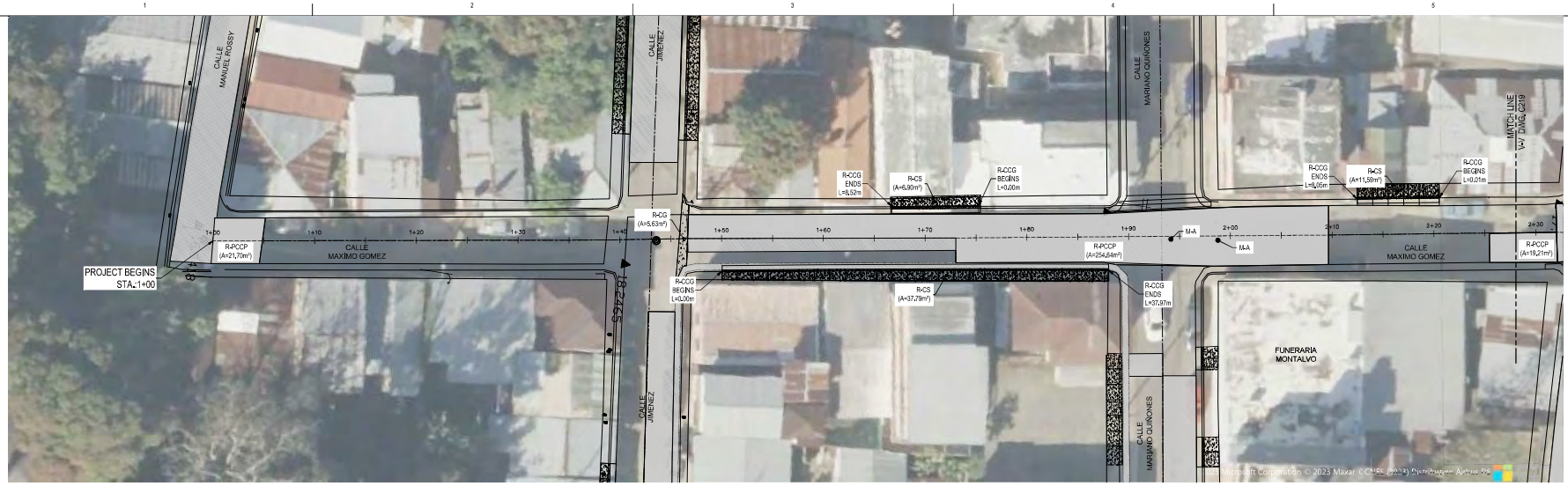

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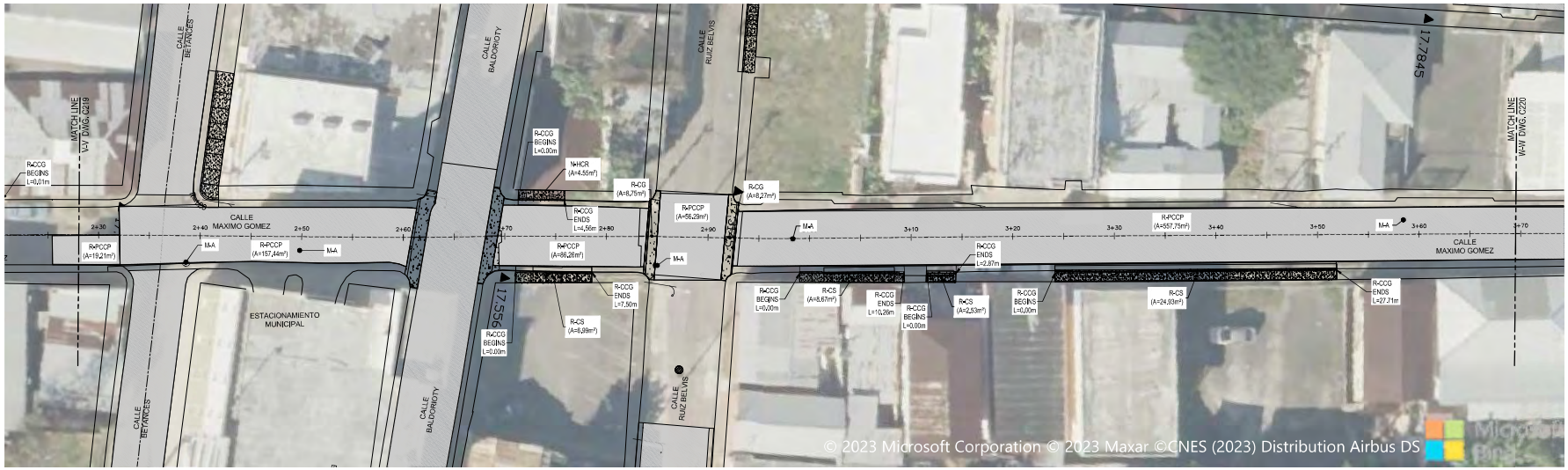

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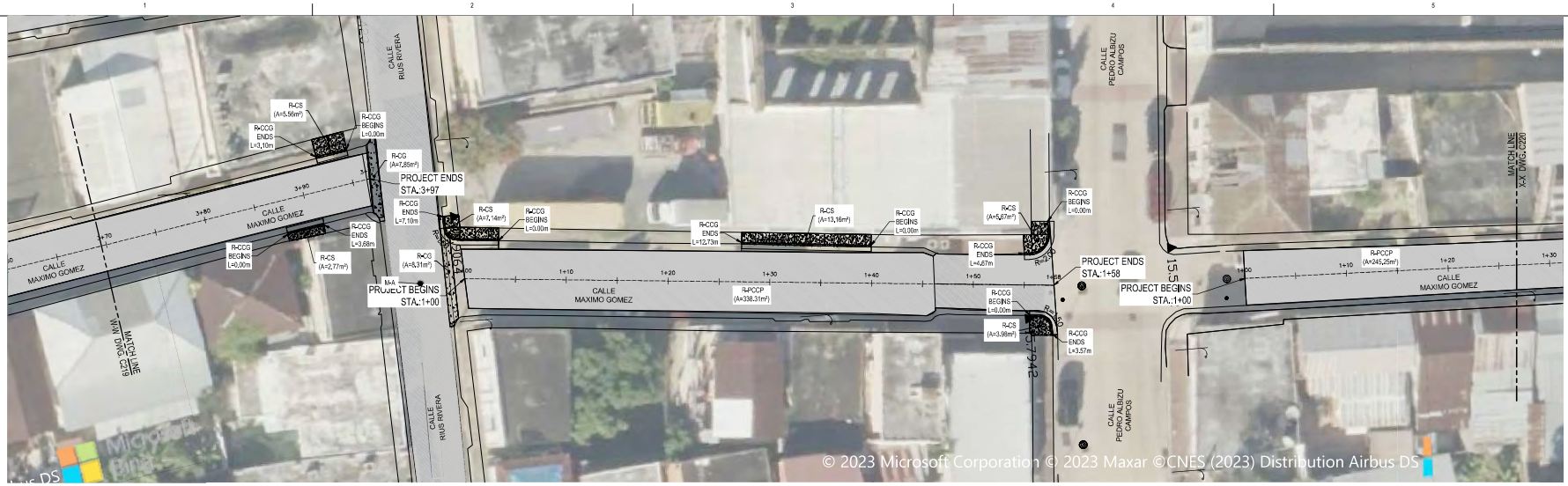
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE MAXIMO
GOMEZ

SHEET ID

C219



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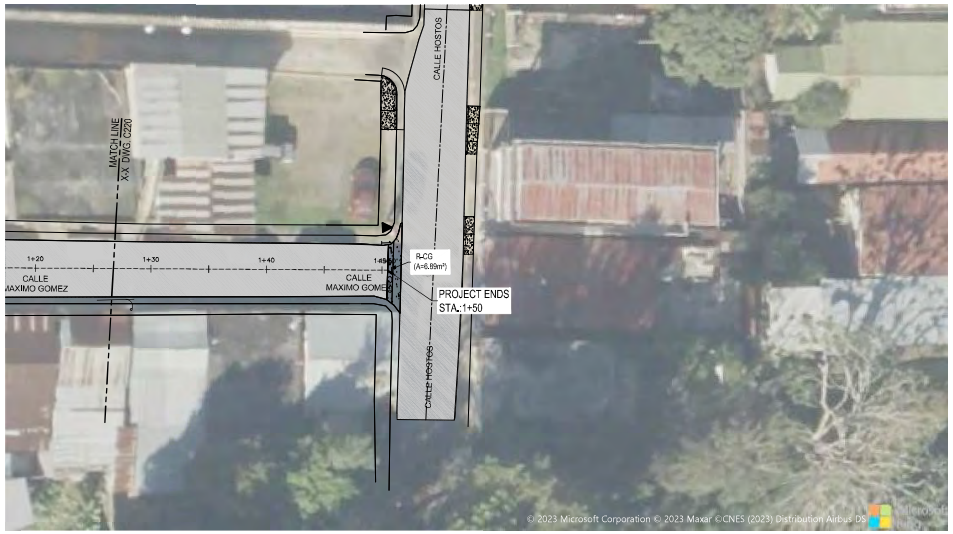

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SCALE: 1:200

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SHEET TITLE

LAYOUT PLAN
CALLE MAXIMO
GOMEZ

SHEET ID

C220

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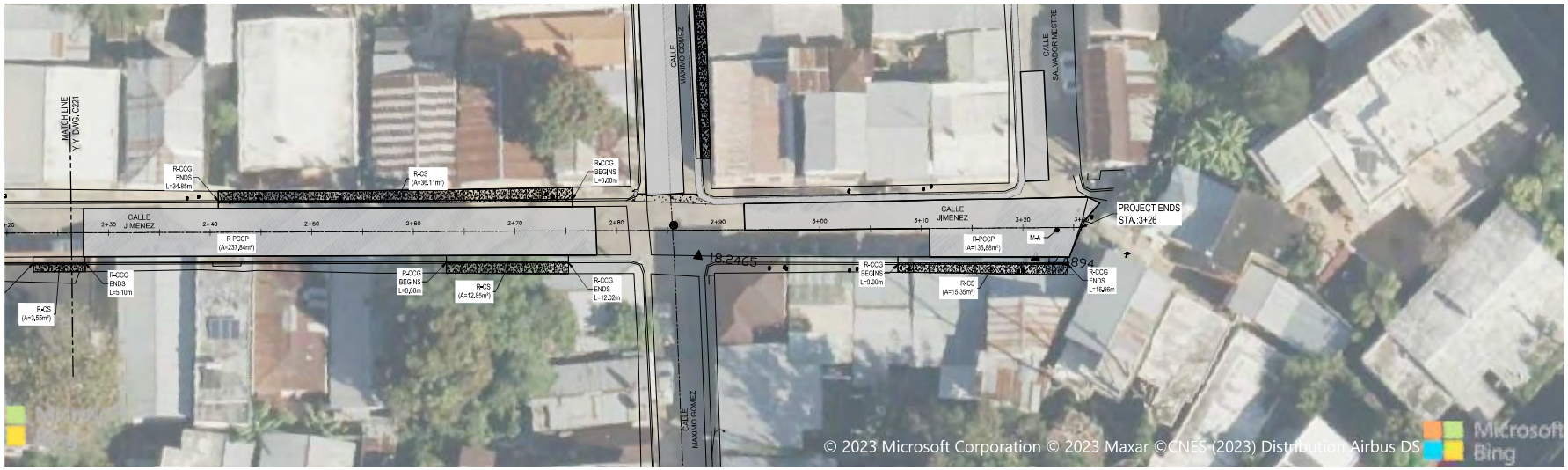
LAYOUT PLAN
SCALE: 1:200



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SEAL

YO, LUZ M. RODRIGUEZ TORRES, LIC.17504, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONÓ Y/O DISEÑÓ Y/O PREPARÓ ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS. TAMBIÉN CERTIFICO QUE ENTIENDO QUE DICHOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONJUNTO Y LAS DISPOSICIONES APLICABLES DE LOS REGLAMENTOS Y CÓDIGOS DE CONSTRUCCIÓN VIGENTES DE LAS AGENCIAS, JUNTAS REGLAMENTADORAS Y CORPORACIONES PÚBLICAS CON JURISDICCIÓN. CERTIFICO, ADEMÁS, QUE EN LA PREPARACIÓN DE ESTOS PLANOS Y ESPECIFICACIONES SE HA CUMPLIDO CABALMENTE CON LO DISPUESTO EN LA LEY NÚM. 14 DEL 8 DE ENERO DE 2004, SEGÚN ENMENDADA, CONOCIDA COMO LEY PARA LA INVERSIÓN POR LA INDUSTRIA PUERTORRIQUEÑA Y CON LA LEY NÚM. 359 DEL 15 MAYO DE 1998 , SEGÚN ENMENDADA, LEY NÚM. 84 DEL 9 DE JULIO DE 1976, SEGÚN ENMENDADA, SEGÚN APLIQUE. RECONOZCO QUE CUALQUIER DECLARACIÓN FALSA O CALIFICACIONES DE LOS HECHOS QUE SE HAYA PROCEDIDO POR DESCONOCIMIENTO O POR NEGLIGENCIA YA SEA POR MÍ, MIS AGENTES O EMPLEADOS, O POR OTRAS PERSONAS CON MI CONOCIMIENTO, ME HACEN RESPONSABLE DE CUALQUIER ACCIÓN JUDICIAL Y DISCIPLINARIA POR LA CUAL

PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	03/31/23
3	90% DESIGN DEVELOPMENT	05/22/23
4	100% DESIGN DEVELOPMENT	08/04/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE JIMENEZ

SHEET ID

C221

LAYOUT PLAN
SCALE: 1:200

LAYOUT PLAN
SCALE: 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
R-PCCP	REMOVAL AND RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT AND REPLEACEMENT OF AGGREGATE BASE COURDE (PRHTA SPEC.503) (SEE DETAILS ON DWG C700)	R-CG	RECONSTRUCTION OF CONCRETE GUTTER (PRHTA SPEC.609)(SEE DETAIL ON DWG. C700)	N-CCD	RECONSTRUCTION OF EXISTING CURB CUT DRIVEWAY (SPEC. 608) (SEE DETAIL ON DWG. C701)	N-PCS	NEW PEDESTRIAN CROSSING SYMBOL (SPEC. 618) (SEE DETAIL ON DWG. C703)
R-CS	RECONSTRUCTION OF CONCRETE SIDEWALK (PRHTA SPEC.608) (SEE DETAIL ON DWG. C701)	REA/R-CP	REMOVAL OF ASPHALT OVERLAY/ RECONSTRUCTION OF CONCRETE PAVEMENT (SPECS. 503 AND 403) (SEE DETAIL ON DWG. C700)	N-HCR	DEMOLITION OF EXISTING SIDEWALK/NEW HANDICAP CONCRETE RAMP (SEC 608)(HC RAMP TYPES AND TYPICAL DETAILS ARE INCLUDED ON DWG. C701)	M-A	MANHOLE ADJUSTMENTS (TOP OF MH TO BE RESET TO MATCH EXISTING GRADE) (SPEC 634)(SEE DETAILS AND DWG. C702)
R-CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R-EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

NOTE:

1. FOR LEGENDS AND NOTES, REFER TO DWG. C200.

2 0 5 10 15m
SCALE: 1:200

OWNER

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
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CABO ROJO PUERTO RICO

REVISIONS

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DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

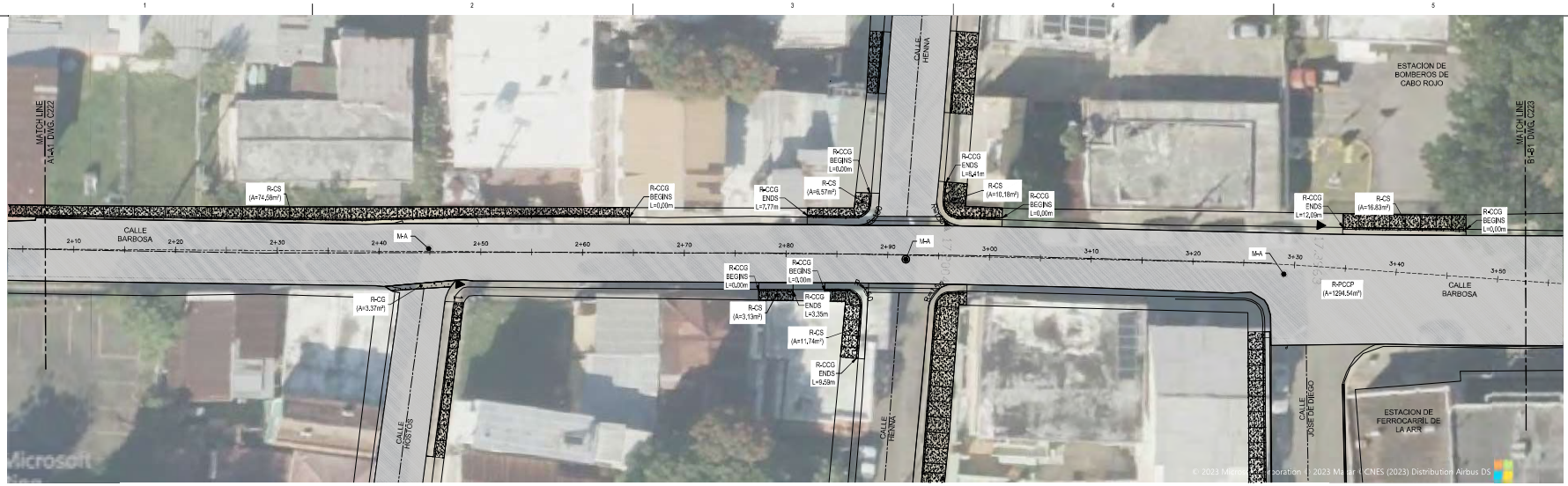
SHEET TITLE

LAYOUT PLAN
CALLE BARBOSA

SHEET ID

C222

7/6/2023 3:15:46 PM



LAYOUT PLAN
SCALE: 1:200

LAYOUT PLAN
SCALE: 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
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R-CS	RECONSTRUCTION OF CONCRETE SIDEWALK (PRHTA SPEC.608) (SEE DETAIL ON DWG. C701)	REA/R-CP	REMOVAL OF ASPHALT OVERLAY/ RECONSTRUCTION OF CONCRETE PAVEMENT (SPECS. 503 AND 403) (SEE DETAIL ON DWG. C700)	N-HCR	DEMOLITION OF EXISTING SIDEWALK/NEW HANDICAP CONCRETE RAMP (SEC 608)(HC RAMP TYPES AND TYPICAL DETAILS ARE INCLUDED ON DWG. C701)	M-A	MANHOLE ADJUSTMENTS (TOP OF MH TO BE RESET TO MATCH EXISTING GRADE) (SPEC 634)(SEE DETAILS AND DWG. C702)
R-CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R-EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

NOTE:

1. FOR LEGENDS AND NOTES, REFER TO DWG. C200.

2 0 5 10 15m
SCALE: 1:200

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
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2	60% DESIGN DEVELOPMENT	03/31/23
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DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

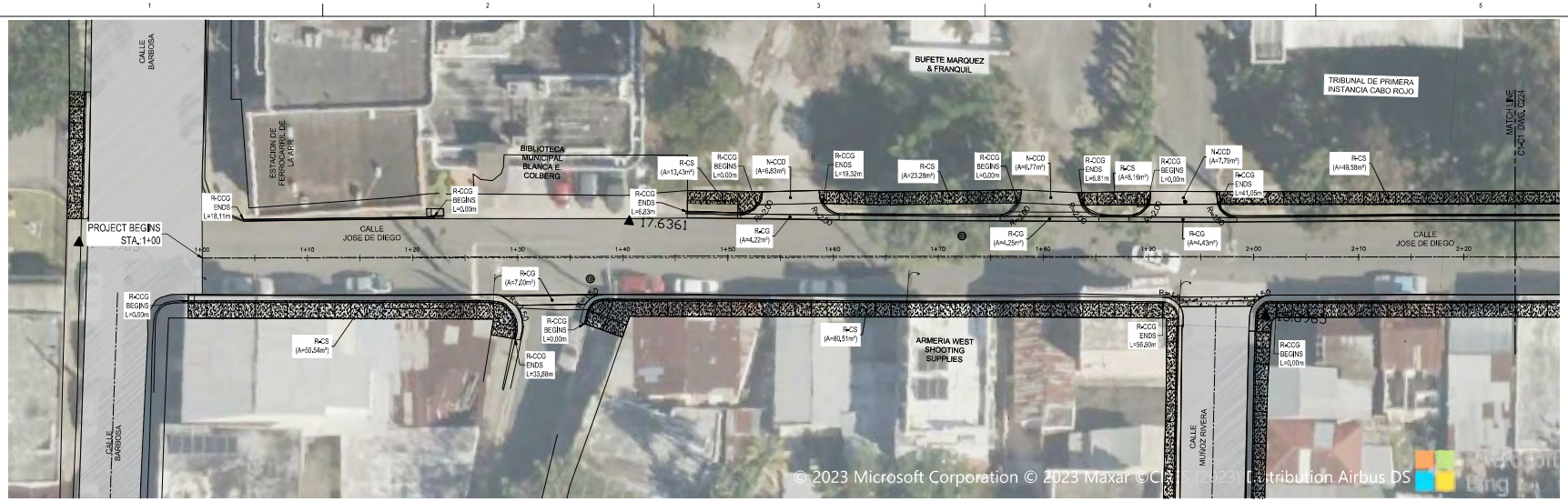
SHEET TITLE

LAYOUT PLAN
CALLE BARBOSA

SHEET ID

C223

7/8/2020 3:15:46 PM



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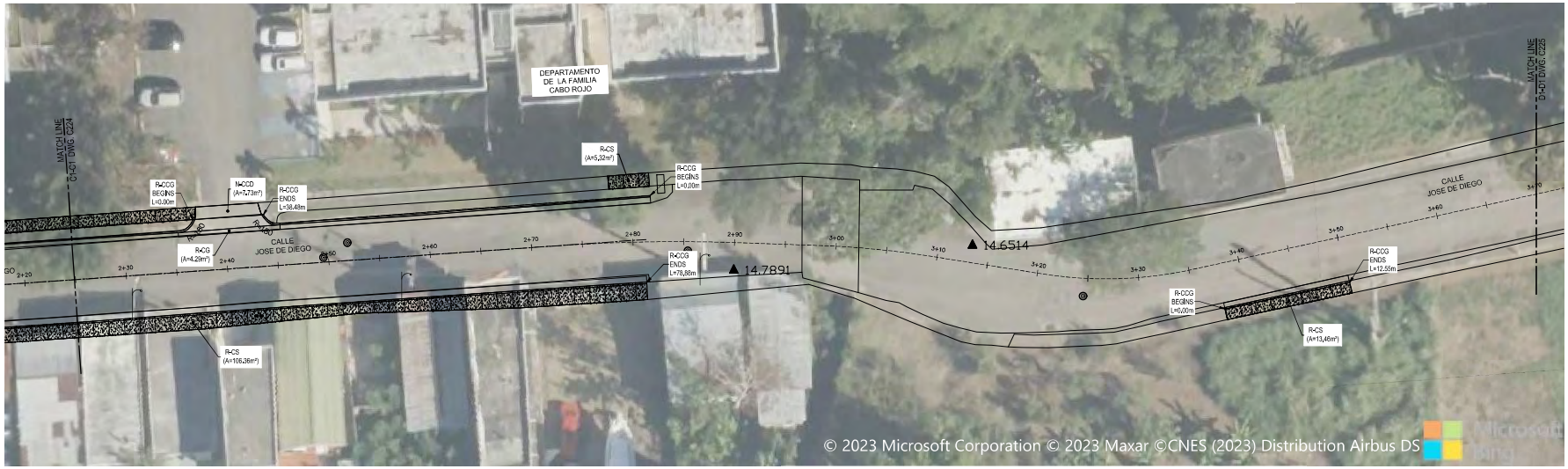
LAYOUT PLAN
SCALE 1:200



N

LAYOUT PLAN
SCALE: 1:200

LEGEND:

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NOTE:

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2 0 5 10 15m

SCALE: 1:200

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

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4	100% DESIGN DEVELOPMENT	08/04/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE JOSE DE DIEGO

SHEET ID

C224

7/6/2023 3:15:46 PM

N

LAYOUT PLAN

SCALE 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
R-PCCP	REMOVAL AND RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT AND REPLEACEMENT OF AGGREGATE BASE COURDE (PRHTA SPEC.503) (SEE DETAILS ON DWG C700)	R-CG	RECONSTRUCTION OF CONCRETE GUTTER (PRHTA SPEC.609)(SEE DETAIL ON DWG. C700)	N-CCD	RECONSTRUCTION OF EXISTING CURB CUT DRIVEWAY (SPEC. 608) (SEE DETAIL ON DWG. C701)	N-PCS	NEW PEDESTRIAN CROSSING SYMBOL (SPEC. 618) (SEE DETAIL ON DWG. C703)
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R-CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R-EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

NOTE:

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2 0 5 10 15m

SCALE: 1:200

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CABO ROJO PUERTO RICO

REVISIONS

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DATE ISSUED:	10/26/22
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DRAWN BY:	AMC
DESIGNED BY:	LMR
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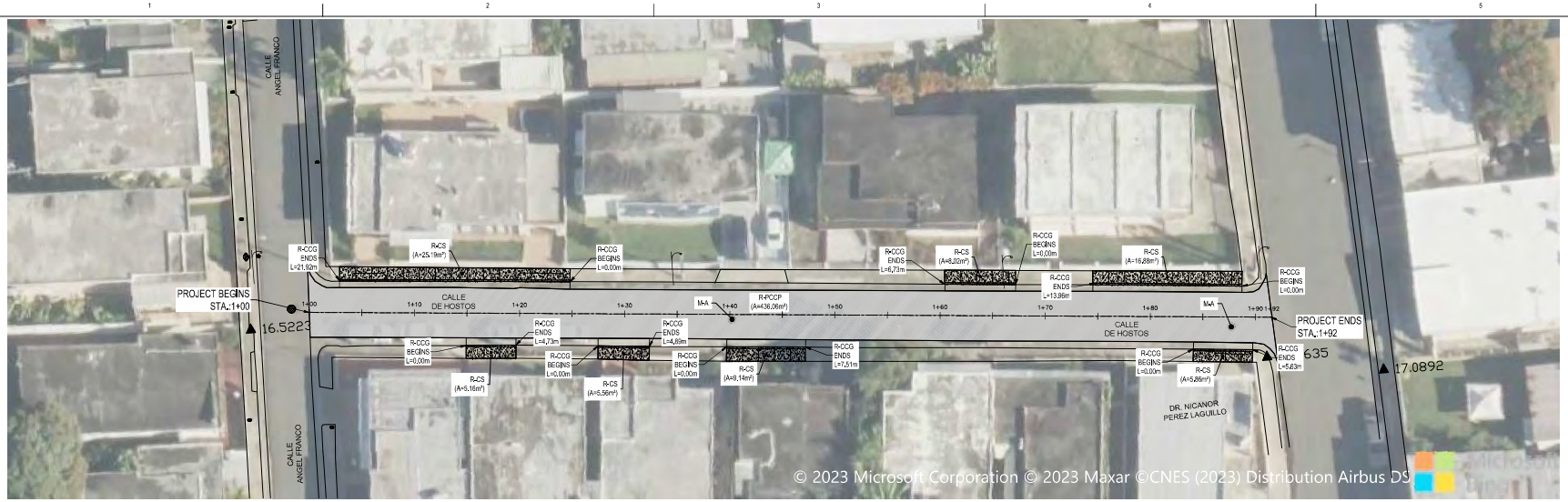
SHEET TITLE

LAYOUT PLAN
CALLE JOSE DE DIEGO

SHEET ID

C225

7/6/2020 3:15:46 PM



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LAYOUT PLAN

SCALE 1:200

LEGEND:

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SEAL

YO, LUZ M. RODRIGUEZ TORRES, LIC.17504, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONÓ Y/O DISEÑÓ Y/O PREPARÓ ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS. TAMBIÉN CERTIFICO QUE ENTIENDO QUE DICHOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONJUNTO Y LAS DISPOSICIONES APLICABLES DE LOS REGLAMENTOS Y CÓDIGOS DE CONSTRUCCIÓN VIGENTES DE LAS AGENCIAS, JUNTAS REGLAMENTADORAS Y CORPORACIONES PÚBLICAS CON JURISDICCIÓN. CERTIFICO, ADEMÁS, QUE EN LA PREPARACIÓN DE ESTOS PLANOS Y ESPECIFICACIONES SE HA CUMPLIDO CABALMENTE CON LO DISPUESTO EN LA LEY NÚM. 14 DEL 8 DE ENERO DE 2004, SEGÚN ENMENDADA, CONOCIDA COMO LEY PARA LA INVERSIÓN POR LA CALIDAD EN PUERTO RICO Y CON LA LEY NÚM. 319 DEL 15 MAYO DE 1998 , SEGÚN ENMENDADA; LEY NÚM. 96 DEL 9 DE JULIO DE 1976, SEGÚN ENMENDADA, SEGÚN APLIQUE. RECONOZCO QUE CUALQUIER DECLARACIÓN FALSA O CALIFICACIONES DE LOS HECHOS QUE SE HAYA PROCEDIDO POR DESCONOCIMIENTO O POR NEGLIGENCIA YA SEA POR MÍ, MIS AGENTES O EMPLEADOS, O POR OTRAS PERSONAS CON MI CONOCIMIENTO, ME HACEN RESPONSABLE DE CUALQUIER ACCIÓN JUDICIAL Y DISCIPLINARIA POR LA CUAL

PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	03/31/23
3	90% DESIGN DEVELOPMENT	05/22/23
4	100% DESIGN DEVELOPMENT	08/04/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE HOSTOS

SHEET ID

C226

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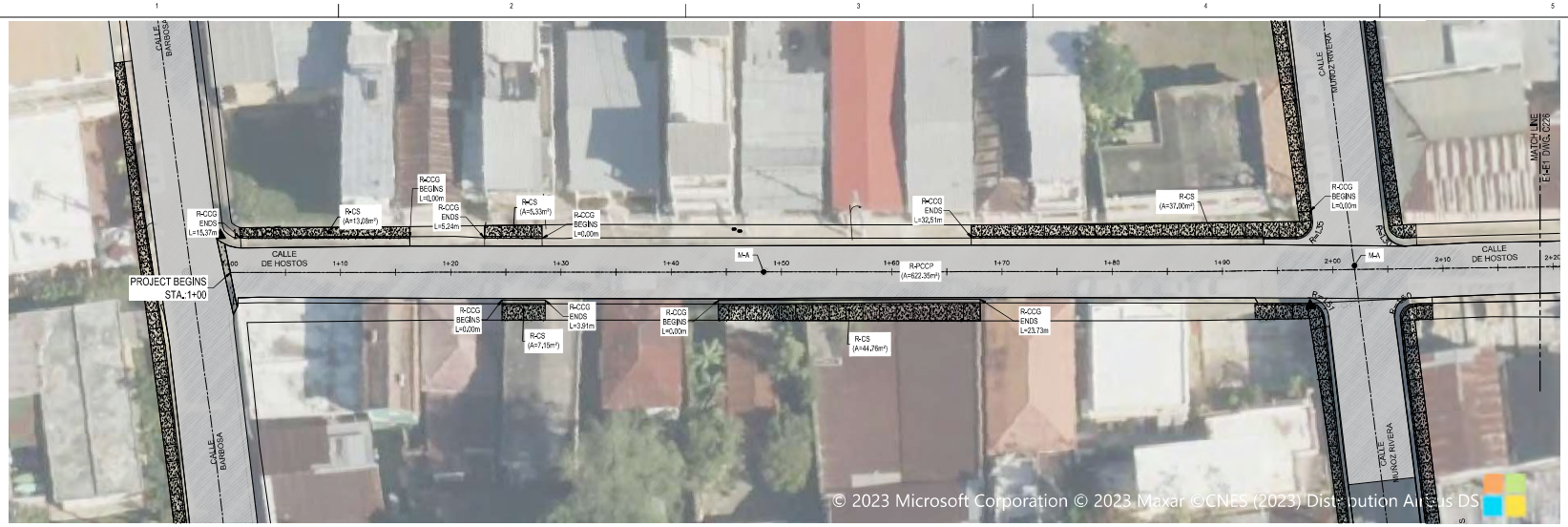

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LAYOUT PLAN
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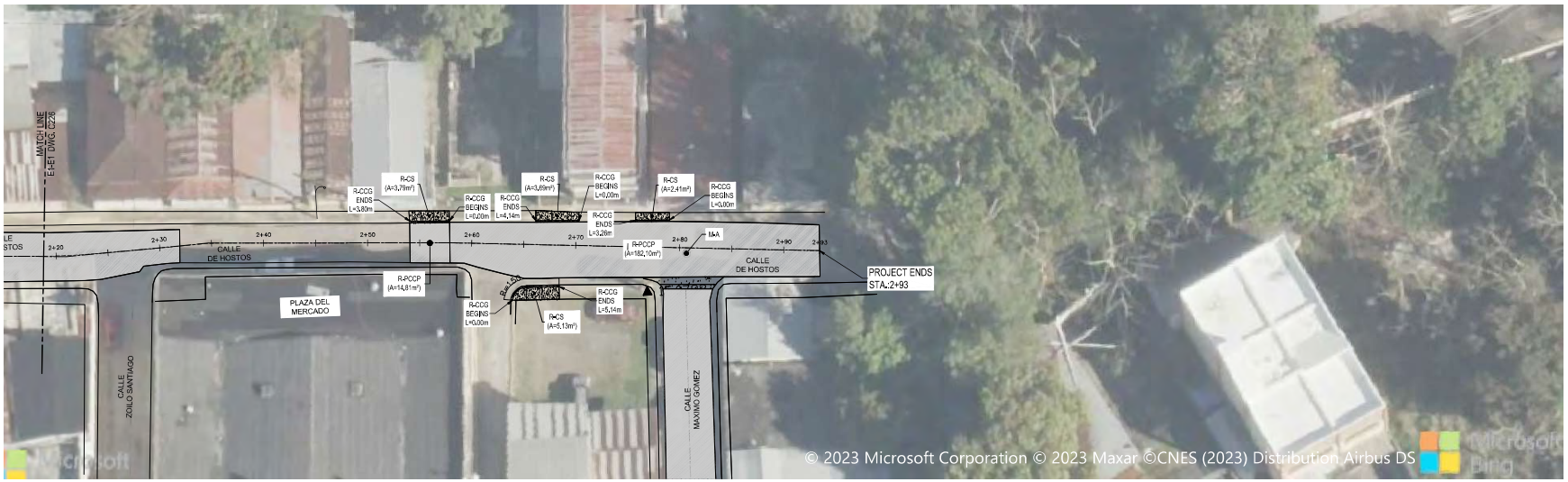

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LAYOUT PLAN
SCALE: 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
R-PCCP	REMOVAL AND RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT AND REPLEACEMENT OF AGGREGATE BASE COURDE (PRHTA SPEC.503) (SEE DETAILS ON DWG C700)	R-CG	RECONSTRUCTION OF CONCRETE GUTTER (PRHTA SPEC.609)(SEE DETAIL ON DWG. C700)	N-CCD	RECONSTRUCTION OF EXISTING CURB CUT DRIVEWAY (SPEC. 608) (SEE DETAIL ON DWG. C701)	N-PCS	NEW PEDESTRIAN CROSSING SYMBOL (SPEC. 618) (SEE DETAIL ON DWG. C703)
R-CS	RECONSTRUCTION OF CONCRETE SIDEWALK (PRHTA SPEC.608) (SEE DETAIL ON DWG. C701)	REA/R-CP	REMOVAL OF ASPHALT OVERLAY/ RECONSTRUCTION OF CONCRETE PAVEMENT (SPECS. 503 AND 403) (SEE DETAIL ON DWG. C700)	N-HCR	DEMOLITION OF EXISTING SIDEWALK/NEW HANDICAP CONCRETE RAMP (SEC 608)(HC RAMP TYPES AND TYPICAL DETAILS ARE INCLUDED ON DWG. C701)	M-A	MANHOLE ADJUSTMENTS (TOP OF MH TO BE RESET TO MATCH EXISTING GRADE) (SPEC 634)(SEE DETAILS AND DWG. C702)
R-CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R-EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

NOTE:

1. FOR LEGENDS AND NOTES, REFER TO DWG. C200.

2 0 5 10 15m
SCALE: 1:200

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SHEET TITLE

LAYOUT PLAN
CALLE HOSTOS

SHEET ID

C227

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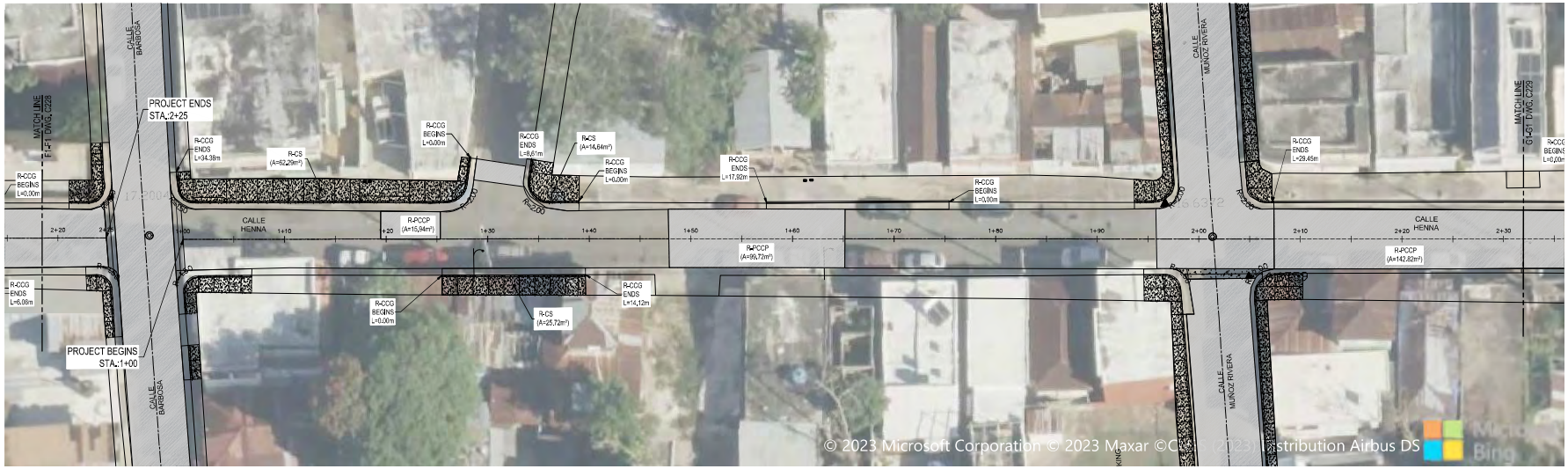
N

LAYOUT PLAN
SCALE: 1:200



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LAYOUT PLAN
SCALE: 1:200

LEGEND:

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R-CS	RECONSTRUCTION OF CONCRETE SIDEWALK (PRHTA SPEC.608) (SEE DETAIL ON DWG. C701)	REA/R-CP	REMOVAL OF ASPHALT OVERLAY/ RECONSTRUCTION OF CONCRETE PAVEMENT (SPECS. 503 AND 403) (SEE DETAIL ON DWG. C700)	N-HCR	DEMOLITION OF EXISTING SIDEWALK/NEW HANDICAP CONCRETE RAMP (SEC 608)(HC RAMP TYPES AND TYPICAL DETAILS ARE INCLUDED ON DWG. C701)	M-A	MANHOLE ADJUSTMENTS (TOP OF MH TO BE RESET TO MATCH EXISTING GRADE) (SPEC 634)(SEE DETAILS AND DWG. C702)
R-CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R-EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

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2 0 5 10 15m

SCALE: 1:200

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
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CABO ROJO PUERTO RICO

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REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE HENNA

SHEET ID

C228

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LAYOUT PLAN

SCALE 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
R-PCCP	REMOVAL AND RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT AND REPLEACEMENT OF AGGREGATE BASE COURDE (PRHTA SPEC.503) (SEE DETAILS ON DWG C700)	R-CG	RECONSTRUCTION OF CONCRETE GUTTER (PRHTA SPEC.609)(SEE DETAIL ON DWG. C700)	N-CCD	RECONSTRUCTION OF EXISTING CURB CUT DRIVEWAY (SPEC. 608) (SEE DETAIL ON DWG. C701)	N-PCS	NEW PEDESTRIAN CROSSING SYMBOL (SPEC. 618) (SEE DETAIL ON DWG. C703)
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NOTE:

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2 0 5 10 15m

SCALE: 1:200

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
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CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/10/22
2	60% DESIGN DEVELOPMENT	03/31/23
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4	100% DESIGN DEVELOPMENT	08/04/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
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DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE HENNA

SHEET ID

C229

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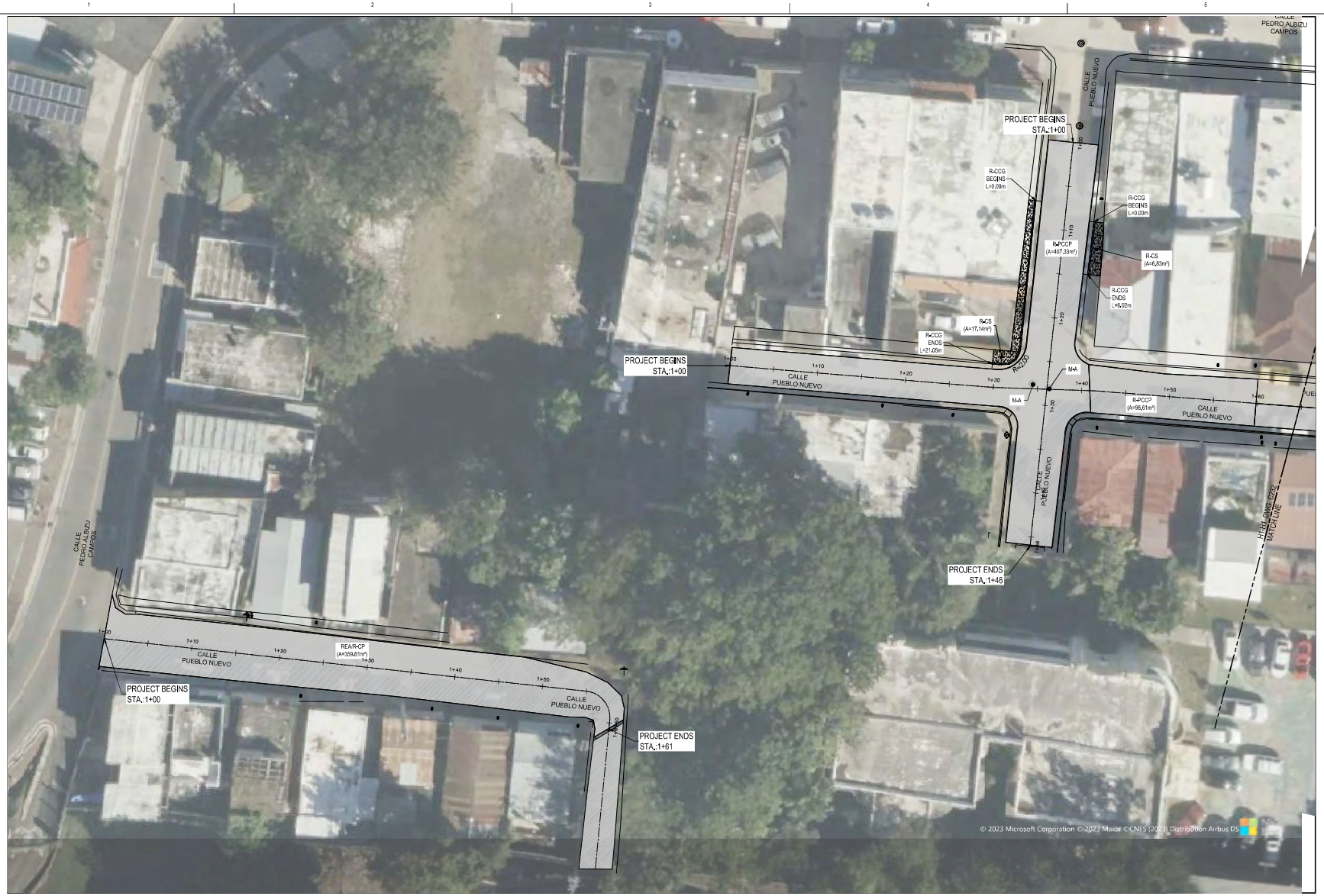

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
R-PCCP	REMOVAL AND RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT AND REPLACEMENT OF AGGREGATE BASE COURDE (PRHTA SPEC.503) (SEE DETAILS ON DWG C700)	R-CG	RECONSTRUCTION OF CONCRETE GUTTER (PRHTA SPEC.609)(SEE DETAIL ON DWG. C700)	N-CCD	RECONSTRUCTION OF EXISTING CURB CUT DRIVEWAY (SPEC. 608) (SEE DETAIL ON DWG. C701)	N-PCS	NEW PEDESTRIAN CROSSING SYMBOL (SPEC. 618) (SEE DETAIL ON DWG. C703)
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R-CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R-EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

NOTE:

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N

LAYOUT PLAN

SCALE: 1:200

2 0 5 10 15m

SCALE: 1:200

7/6/2020 3:15:46 PM

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DATE ISSUED:	10/26/22
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DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLES PUEBLO
NUEVO

SHEET ID

C230

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
R–PCCP	REMOVAL AND RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT AND REPLEACEMENT OF AGGREGATE BASE COURDE (PRHTA SPEC.503) (SEE DETAILS ON DWG C700)	R–CG	RECONSTRUCTION OF CONCRETE GUTTER (PRHTA SPEC.609)(SEE DETAIL ON DWG. C700)	N–CCD	RECONSTRUCTION OF EXISTING CURB CUT DRIVEWAY (SPEC. 608) (SEE DETAIL ON DWG. C701)	N–PCS	NEW PEDESTRIAN CROSSING SYMBOL (SPEC. 618) (SEE DETAIL ON DWG. C703)
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NOTE:

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SCALE: 1:200

LAYOUT PLAN
SCALE: 1:200

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CONSULTANT

SEAL

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	03/31/23
3	90% DESIGN DEVELOPMENT	05/22/23
4	100% DESIGN DEVELOPMENT	08/04/23

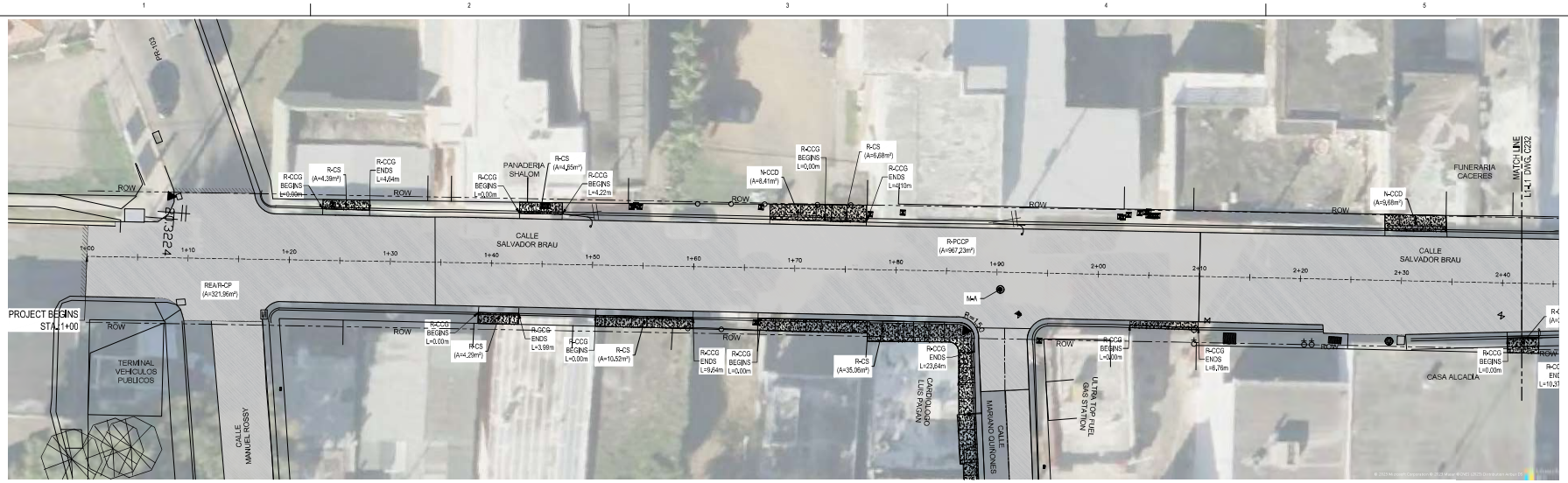
DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

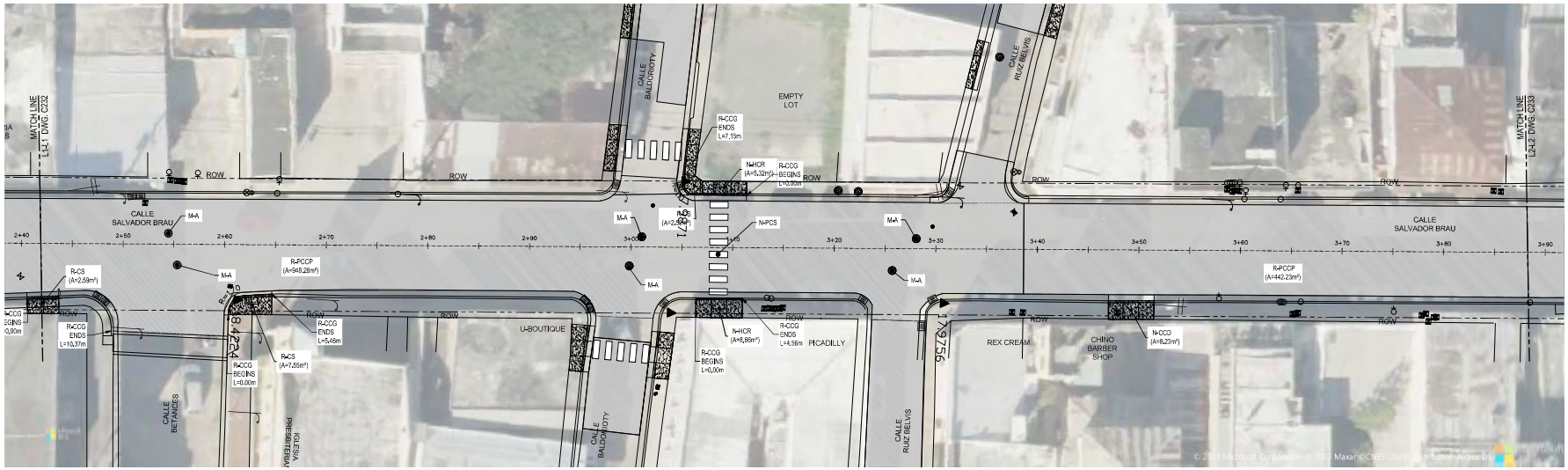
LAYOUT PLAN
CALLES PUEBLO
NUEVO

SHEET ID

C231



LAYOUT PLAN
SCALE: 1:200



LAYOUT PLAN
SCALE: 1:200

LEGEND:

ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION	ID	TREATMENT DESCRIPTION
R-PCCP	REMOVAL AND RECONSTRUCTION OF PORTLAND CEMENT CONCRETE PAVEMENT AND REPLACEMENT OF AGGREGATE BASE COURDE (PRHTA SPEC.503) (SEE DETAILS ON DWG C700)	R-CG	RECONSTRUCTION OF CONCRETE GUTTER (PRHTA SPEC.609)(SEE DETAIL ON DWG. C700)	N-CCD	RECONSTRUCTION OF EXISTING CURB CUT DRIVEWAY (SPEC. 608) (SEE DETAIL ON DWG. C701)	N-PCS	NEW PEDESTRIAN CROSSING SYMBOL (SPEC. 618) (SEE DETAIL ON DWG. C703)
R-CS	RECONSTRUCTION OF CONCRETE SIDEWALK (PRHTA SPEC.608) (SEE DETAIL ON DWG. C701)	REA/R-CP	REMOVAL OF ASPHALT OVERLAY/ RECONSTRUCTION OF CONCRETE PAVEMENT (SPECS. 503 AND 403) (SEE DETAIL ON DWG. C700)	N-HCR	DEMOLITION OF EXISTING SIDEWALK/NEW HANDICAP CONCRETE RAMP (SEC 608)(HC RAMP TYPES AND TYPICAL DETAILS ARE INCLUDED ON DWG. C701)	M-A	MANHOLE ADJUSTMENTS (TOP OF MH TO BE RESET TO MATCH EXISTING GRADE) (SPEC 634)(SEE DETAILS AND DWG. C702)
R-CCG	RECONSTRUCTION OF CONCRETE CURB AND GUTTER (PRHTA SPEC.609)(SEE DETAILS ON DWG. C701)	R-EPS	RECONSTRUCTION OF EXISTING PAVERS SECTION (SEE DETAIL ON DWG. C700)				

NOTE:

1. FOR LEGENDS AND NOTES, REFER TO DWG. C200.

2 0 5 10 15m
SCALE: 1:200

OWNER

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DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
SALVADOR
BRAU

SHEET ID

C232

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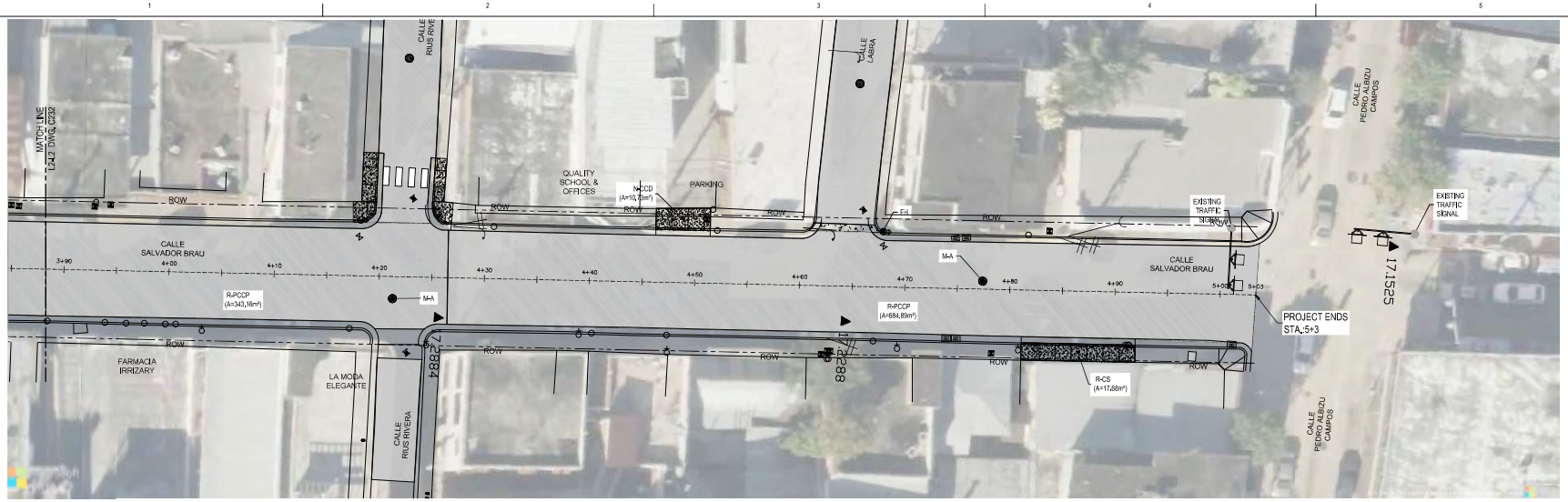

LAYOUT PLAN
SCALE 1:200

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NOTE:

1. FOR LEGENDS AND NOTES, REFER TO DWG. C200.

2 0 5 10 15m

SCALE: 1:200

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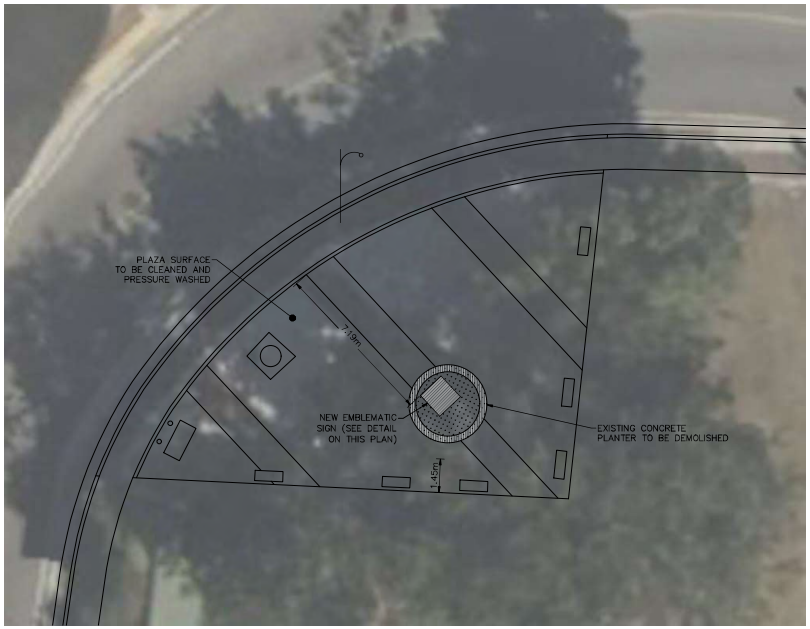
SHEET TITLE

LAYOUT PLAN
SALVADOR
BRAU

SHEET ID

C233

7/6/2020 3:15:46 PM



N

EMBLEMATIC SIGN No. 1

SCALE: 1:100

NOTES:

1. NEW EMBLEMATIC SIGN SHOWN ON THIS PLAN IS CONCEPTUAL. MUNICIPALITY SHOULD VERIFY WITH LOCAL ARTIST TO COORDINATE FINAL MATERIALS, DIMENSIONS AND COST.
   SIGN DIMENSIONS: 4FT X 4FT X 6FT TALL
   MATERIALS: TO BE DETERMINED BY ARTIST
2. INSTALLATION OF EMBLEMATIC SIGN WORKS INCLUDES:
   a. DEMOLITION OF EXISTING PLANTER
   b. EXCAVATION FOR NEW FOOTING (REQUIRED FOR NEW SIGN) (TBD)
   c. FILL MATERIAL ABOVE FOOTING UP TO EXISTING ELEVATION
   d. INSTALLATION OF NEW EMBLEMATIC SIGN
   e. INSTALLATION OF TOP SOIL AND GRASS AROUND THE SIGN
   f. CLEANED AND PRESSURE WASHED PLAZA SURFACE

N

EMBLEMATIC SIGN No. 2

SCALE: 1:100

NOTES:

1. EXISTING MONUMENT TO BE REMOVED. PLAQUE TO BE REMOVED AND SAVED TO INSTALL LATER ON NEW EMBLEMATIC SIGN.
2. NEW EMBLEMATIC SIGN SHOWN ON THIS PLAN IS CONCEPTUAL. MUNICIPALITY SHOULD VERIFY WITH LOCAL ARTIST TO COORDINATE FINAL MATERIALS, DIMENSIONS AND COST.
   SIGN DIMENSIONS: 4FT X 4FT X 6FT TALL
   MATERIALS: TO BE DETERMINED BY ARTIST
3. INSTALLATION OF EMBLEMATIC SIGN WORKS INCLUDES:
   a. DEMOLITION OF EXISTING PLANTER
   b. DEMOLISHED PART OF EXISTING CONCRETE SLAB (USE SAW CUT TO DEFINE AREA)
   c. EXCAVATION OF NEW FOOTING (REQUIRED FOR NEW SIGN)TBD.
   d. FILL MATERIAL ABOVE FOOTING UP TO EXISTING ELEVATION
   e. INSTALLATION OF NEW EMBLEMATIC SIGN
   f. INSTALLATION OF TOP SOIL AND GRASS AROUND THE SIGN
   g. CLEANED AND PRESSURE WASHED PLAZA SURFACE

.5 0 1 2 3 4 5m

SCALE: 1:100

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DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

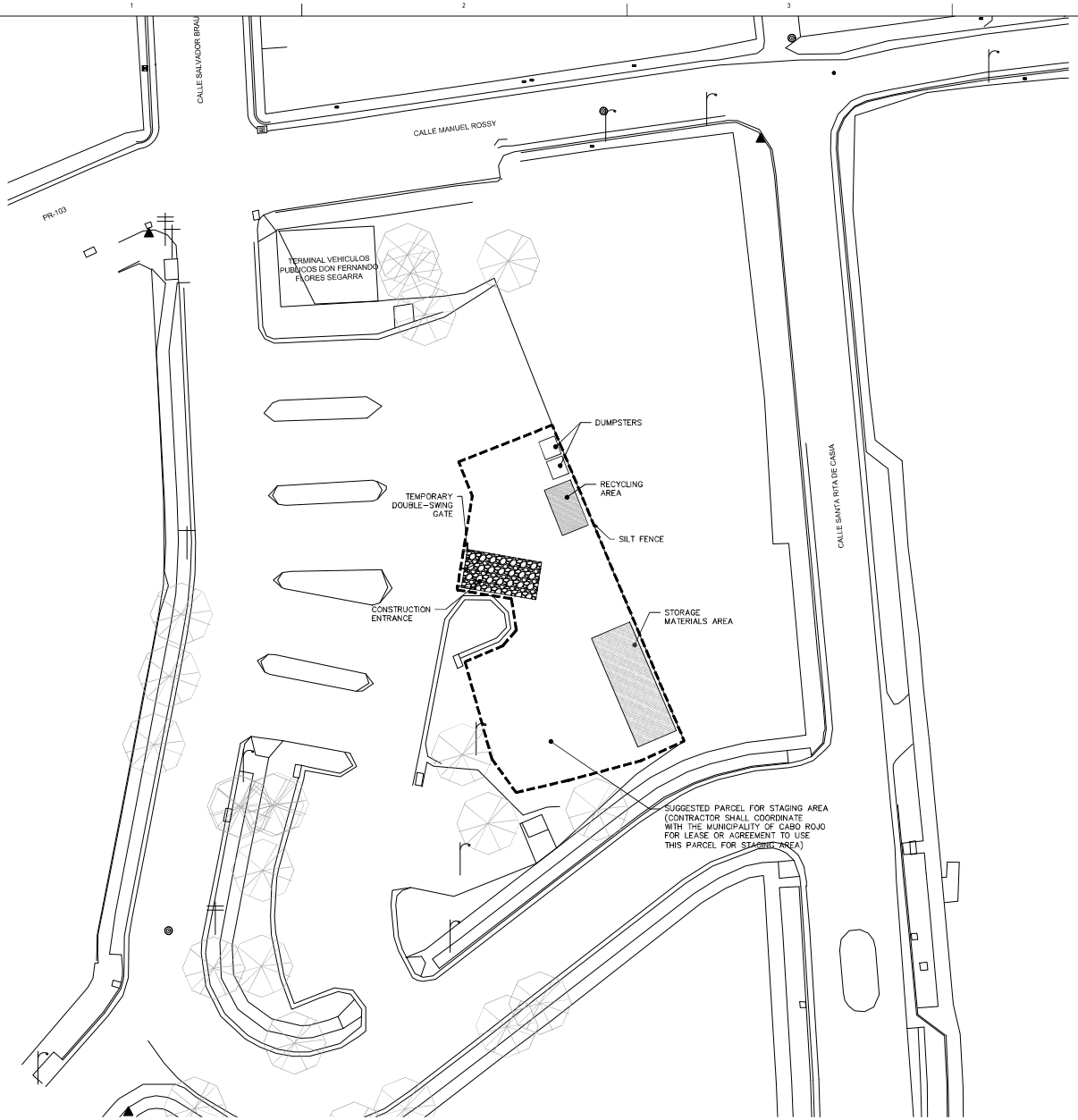
SHEET TITLE

LOCATION FOR
EMBLEMATICS

SHEET ID

C240

7/8/2020 3:15:46 PM



N

EROSION AND SEDIMENTATION CONTROL PLAN

SCALE: 1:200

LEGEND:

- PROPERTY LIMIT
- SILT FENCE (SEE DETAILS ON DWG. C490)
- INLET PROTECTION (ON EXISTING INLETS) (SEE DETAILS ON DWG. C490)
- CONSTRUCTION ENTRANCE (SEE DETAILS ON DWG. C401)
- CONTROL STATION (REFER TO TOPOGRAPHIC AND SURVEY PLANS)
- FLOW DIRECTION
- TRAFFIC DIRECTION

NOTES:

1. ALL DIMENSIONS ARE EXPRESSED IN METERS, UNLESS OTHERWISE NOTED.
2. FOR EROSION AND SEDIMENT CONTROL DETAILS AND NOTES, REFER TO DWG. C490.
3. ALL EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO COMMENCE WITH ANY DEMOLITION OR EXCAVATION, AND MAINTAINED THROUGHOUT THE DURATION OF THE CONSTRUCTION.
4. FOR TOPOGRAPHIC AND SURVEY PLAN, REFER TO PLAN PREPARED BY LICENSED SURVEYOR RAFAEL A. POZO, (LIC.#10028), DATED FEBRUARY 24, 2023.
5. TEMPORARY STAGING AREA LOCATION IS SUGGESTED. CONTRACTOR SHALL COORDINATE WITH THE MUNICIPALITY OF CABO ROJO THE THE PROPOSED STAGING AREA AND AGREEMENTS FOR USING THIS AREA.

2 0 5 10 15m

SCALE: 1:200

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SHEET TITLE

EROSION AND SEDIMENTATION CONTROL PLAN

SHEET ID

C480

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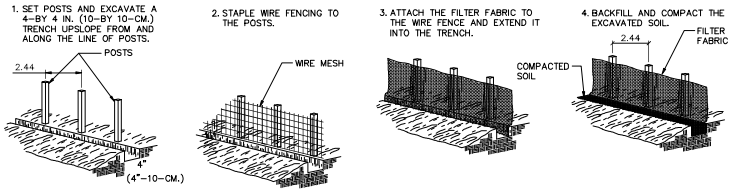
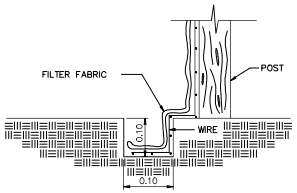
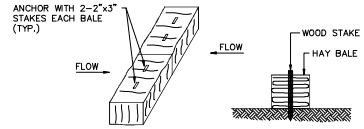


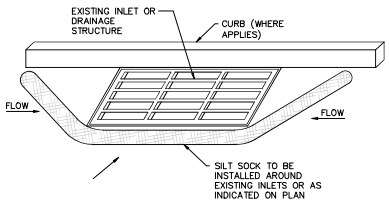


SILT FENCE CONSTRUCTION DETAILS
SCALE: NTS

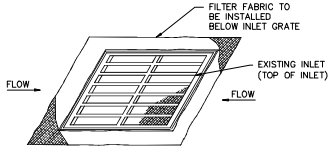


HAY BALE INSTALLATION DETAILS
SCALE: NTS

SILT FENCE INSTALLATION DETAILS
SCALE: NTS

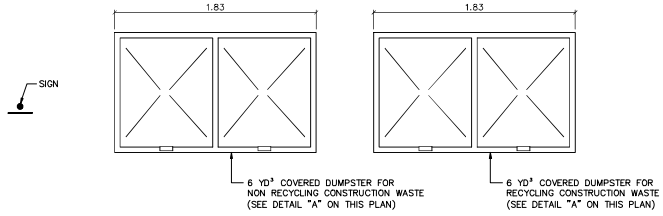


SILT SOCK ON INLET DETAIL
SCALE: NTS

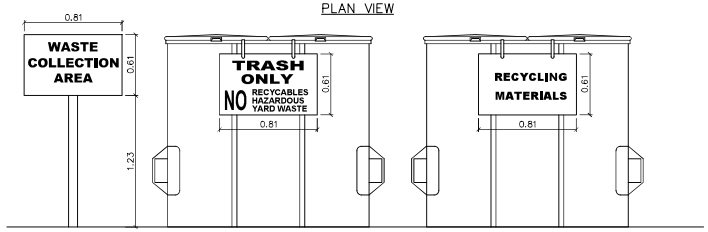


INLET PROTECTION DETAIL
SCALE: NTS

PROJECT SIGN DETAIL
SCALE: NTS



PLAN VIEW



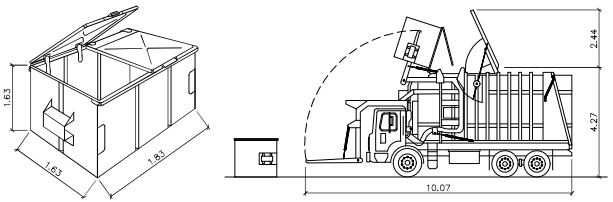
TRASH ONLY
DUMPSTER SIGN SPECS

- 5/8" PAINTED BOARD
- 6" METAL HANGER
- RED LETTERS

RECYCLING
MATERIALS

- 5/8" PAINTED BOARD
- 6" METAL HANGER
- RED LETTERS

FRONT VIEW



DETAIL "A"

DETAIL "B"

DUMPSTER AND RECYCLING AREA DETAILS
SCALE: NTS

CES PLAN NOTES

1. THE CONTRACTOR SHALL PROTECT ALL CATCH BASINS, SWALES AND CHANNELS NEAR THE PROJECT AREA THAT COULD BE POTENTIALLY IMPACTED, PRIOR TO START ANY EXCAVATION. ALL MEASURES CAN BE REMOVED WHEN THE LOCAL CONSTRUCTION BE COMPLETED.
2. CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES IN THE PROJECT AREAS THAT COULD BE POTENTIALLY IMPACTED PRIOR TO START ANY CONSTRUCTION ACTIVITIES IN THAT AREA. THE CONTRACTOR COULD REMOVE THE CONTROL MEASURES WHEN THE AREA IS FULLY STABILIZED AS DETERMINED BY THE CES PLAN INSPECTOR.
3. CONTRACTOR SHALL INSPECT SEDIMENT BARRIERS AFTER EACH RAIN EVENT.REPAIRS SHALL BE DONE AS SOON AS POSSIBLE.SEDIMENT SHALL BE REMOVED FROM THE BARRIERS WHEN THEY REACH HALF THE HEIGHT OF THE BARRIER.
4. THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF THE STABILIZED CONSTRUCTION ENTRANCE AS DETAILED ON THIS PLAN.
5. THE CONTRACTOR SHALL MAINTAIN A WATER TANK TRUCK TO SPRAY IT AROUND THE WORKING AREAS WHEN NEEDED OR WHEN THE PROJECT INSPECTOR REQUIRES IT. A WATER HOSE WILL BE INSTALLED NEAR STABILIZED CONSTRUCTION ENTRANCE TO WASH THE CONSTRUCTION VEHICLES WHEELS.
6. THE CONTRACTOR SHALL STRICTLY FOLLOW THE GUIDELINES STATED AT THE CES PLAN APPROVED BY THE ENVIRONMENTAL QUALITY BOARD.
7. THE CONTRACTOR SHALL DISPOSE ALL WASTE MATERIALS AT AN APPROVED LANDFILL.
8. THE CONTRACTOR SHALL RESTORE PAVED AREAS AND RE-SEED GRASS AREAS AS SOON AS POSSIBLE OR AS INSTRUCTED BY THE PROJECT INSPECTOR.
9. ANY MODIFICATION PROPOSAL TO THE CES PLAN SHALL BE CONSULTED WITH THE DESIGNER IN ORDER TO AMEND THE APPROVED PLAN.
10. A SIGN SHALL BE INSTALLED AT EACH PROJECT ENTRANCE AS PER CONSOLIDATED GENERAL PERMIT CONDITION NUMBER 2.
11. CONTRACTOR CAN CHOOSE TO INSTALL DIFFERENT METHODS TO ACHIEVE THE REQUIRED PERFORMANCE.
12. CONTRACTOR IS RESPONSIBLE TO PREPARE, SUBMIT AND OBTAIN THE PUI (PERMISO UNICO INCIDENTAL) FOR THIS PROJECT.

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YO, LUZ M. RODRIGUEZ TORRES, LIC.17504, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONÓ Y/O DISEÑÓ Y/O PREPARÓ ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS. TAMBIÉN CERTIFICO QUE ENTIENDO QUE DICHOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONJUNTO Y LAS DISPOSICIONES APLICABLES DE LOS REGLAMENTOS Y CÓDIGOS DE CONSTRUCCIÓN VIGENTES DE LAS AGENCIAS, JUNTAS REGLAMENTADORAS Y CORPORACIONES PÚBLICAS CON JURISDICCIÓN. CERTIFICO, ADEMÁS, QUE EN LA PREPARACIÓN DE ESTOS PLANOS Y ESPECIFICACIONES SE HA CUMPLIDO CABALMENTE CON LO DISPUESTO EN LA LEY NÚM. 14 DEL 8 DE ENERO DE 2004, SEGÚN ENMENDADA, CONOCIDA COMO LEY PARA LA INVERSIÓN POR LA INGENIERÍA PUERTORRIQUEÑA Y CON LA LEY NÚM. 319 DEL 15 MAYO DE 1998 , SEGÚN ENMENDADA, LEY NÚM. 84 DEL 9 DE JULIO DE 1976, SEGÚN ENMENDADA, SEGÚN APLIQUE. RECONOZCO QUE CUALQUIER DECLARACIÓN FALSA O CALIFICACIONES DE LOS HECHOS QUE SE HAYA PROCEDIDO POR DESCONOCIMIENTO O POR NEGLIGENCIA YA SEA POR MÍ, MIS AGENTES O EMPLEADOS, O POR OTRAS PERSONAS CON MI CONOCIMIENTO, ME HACEN RESPONSABLE DE CUALQUIER ACCIÓN JUDICIAL Y DISCIPLINARIA POR LA ORPE.

PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO — PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/10/22
2	60% DESIGN DEVELOPMENT	03/31/23
3	90% DESIGN DEVELOPMENT	05/22/23
4	100% DESIGN DEVELOPMENT	08/04/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

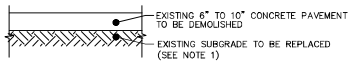
SHEET TITLE

EROSION AND SEDIMENTATION CONTROL PLAN

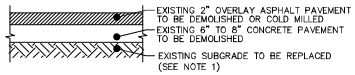
SHEET ID

C490

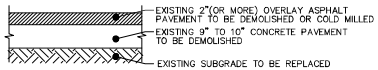
7/6/2020 3:15:46 PM



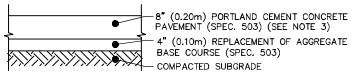
CASE 1-DEMOLITION DETAIL
SCALE: NTS



CASE 2-DEMOLITION DETAIL
SCALE: NTS



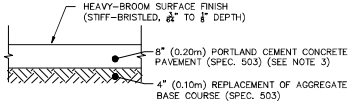
CASE 3-DEMOLITION DETAIL
SCALE: NTS



RECONSTRUCTION OF CONCRETE PAVEMENT DETAILS
SCALE: NTS

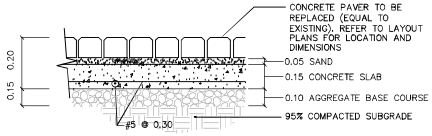
CONC. PAVEMENT DEMOLITION AND RECONSTRUCTION NOTES:

1. THE EXISTING SUBGRADE SHOULD BE REMOVED AND REPLACED WITH A NEW LAYER OF AGGREGATE BASE COURSE AS SHOWN ON DETAILS. THE SUBGRADE SHOULD BE REMOVED TO SUCH DEPTH THAT THE NEW PCC CONCRETE AND NEW AGGREGATE BASE COURSE MAINTAIN THE EXISTING FINISHED GRADE AND SLOPES OF THE EXISTING PAVEMENT.
2. THE GRADING OF NEW AGGREGATE BASE COURSES SHALL BE CLASS A ACCORDING TO SPEC. 703.
3. THE NEW PORTLAND CEMENT CONCRETE PAVEMENT SHALL BE NORMAL SET CONCRETE (SPEC 503) EXCEPT THAT THE MINIMUM COMPRESSIVE STRENGTH AT 7 DAYS SHALL BE 3,000 PSI.
4. THE ENGINEER WILL DECIDE WHEN THE PAVEMENT WILL BE OPENED TO TRAFFIC. THE PAVEMENT WILL NOT BE OPENED TO TRAFFIC UNTIL TEST SPECIMENS HAVE ATTAINED A COMPRESSIVE STRENGTH OF 3,000 PSI, UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.
5. PROVIDE HEAVY BROOM SURFACE FINISH ON STREETS WITH STEEP SLOPES AND CARS SKID ON SLOPE.

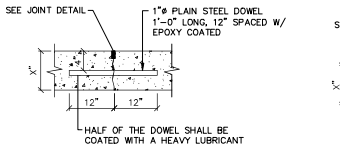


(CALLE MANUEL ROSSY)

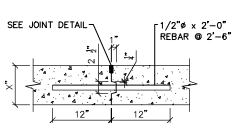
RECONSTRUCTION OF CONCRETE PAVEMENT DETAIL
SCALE: NTS



CONCRETE PAVER DETAIL
SCALE: NTS

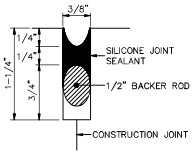


TRANSVERSE CONTRACTION JOINT



LONGITUDINAL CONTRACTION JOINT

CONCRETE PAVEMENT JOINT DETAILS
SCALE: NTS



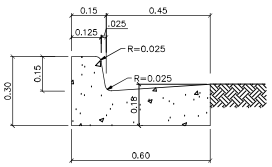
JOINT DETAIL
SCALE: NTS

STEEL DOWEL (EPOXY COATED, PLAIN, OR DEFORMED) AND DEPTH OF JOIN SAW				
PAVEMENT THICKNESS (METERS)	DOWEL BAR DIAMETER (INCHES)	DOWEL LENGTH (METERS)	DOWEL SPACING (METERS)	DEPTH OF JOINT SAW CUT (METERS)
0.200	1-3/8"	0.450	0.305	0.07
0.250	1-1/2"	0.450	0.305	0.08
0.350	1-5/8"	0.450	0.305	0.10

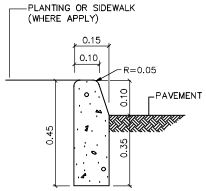
TABLE NO. 1: STEEL DOWELS
SCALE: NTS

TIE BARS (EPOXY COATED, DEFORMED)						
TYPE AND GRADE OF STEEL	WORKING STRESS (PSI)	EXISTING PAVEMENT THICKNESS	NO. 5 BARS			
			MINIMUM OVERALL LENGTH (INCHES)	LANE WIDTH (METERS)		
				3.05	3.35	3.65
				MAXIMUM SPACING (INCHES)		
GRADE 60 BILLET STEEL	30,000	0.20	30	48	48	48
	30,000	0.25	30	48	48	48
	30,000	0.35	30	48	48	40

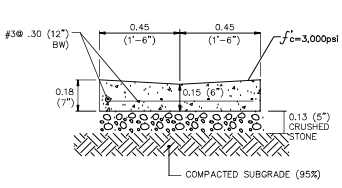
TABLE NO. 2: TIE BARS
SCALE: NTS



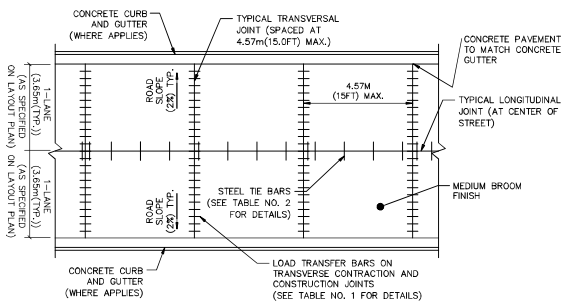
TYPICAL CURB AND GUTTER DETAIL
SCALE: NTS



CONCRETE CURB DETAIL
SCALE: NTS

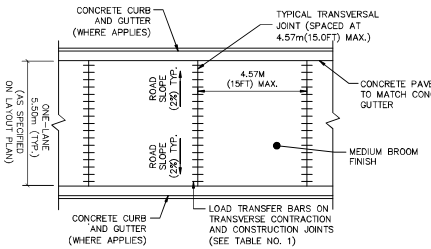


CONCRETE GUTTER DETAIL
SCALE: NTS



CONCRETE PAVEMENT REHABILITATION (TWO-LANES STREET)- PLAN
- FOR TWO OR MORE CONTINUOS SLABS TO BE REPLACED

SCALE: NTS



CONCRETE PAVEMENT REHABILITATION (ONE-LANE STREET)- PLAN
- FOR TWO OR MORE CONTINUOS SLABS TO BE REPLACED

SCALE: NTS

NOTES:

1. PROVIDE ROAD SLOPE PERCENT SIMILAR TO EXISTING TO MATCH EXISTING GRADE.
2. LOAD TRANSFER BARS PLACED ALONG THE TRANSVERSAL JOINTS BETWEEN EXISTING SLABS AND NEW SLABS SHALL BE PLAIN.
3. STEEL TIE BARS PLACED ALONG THE LONGITUDINAL JOINTS SHALL BE EPOXY COATED AND DEFORMED.
4. PLAIN DOWELS WILL BE LUBRICATED WITH OIL. GREASE WILL NOT BE ALLOWED.
5. DOWEL INSTALLATION IS SUBSIDIARY OF SPEC. 503

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/10/22
2	60% DESIGN DEVELOPMENT	03/31/23
3	90% DESIGN DEVELOPMENT	05/22/23
4	100% DESIGN DEVELOPMENT	08/04/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

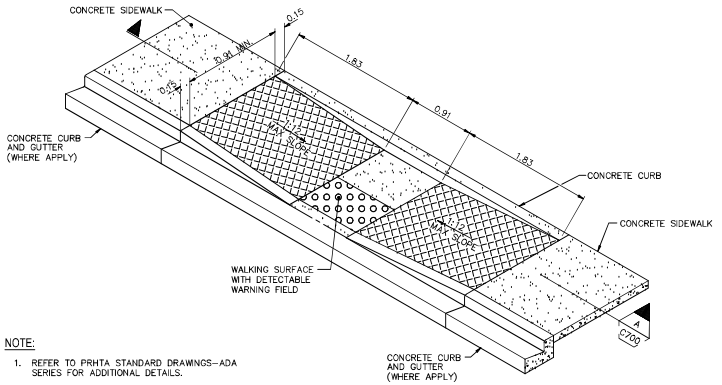
SHEET TITLE

TYPICAL SECTIONS AND DETAILS

SHEET ID

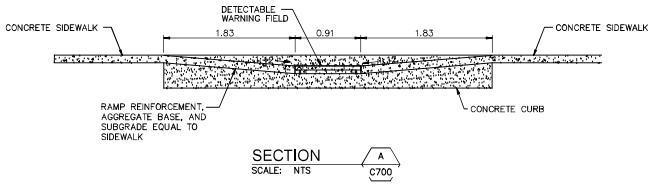
C700

7/6/2020 3:15:46 PM



NOTE:

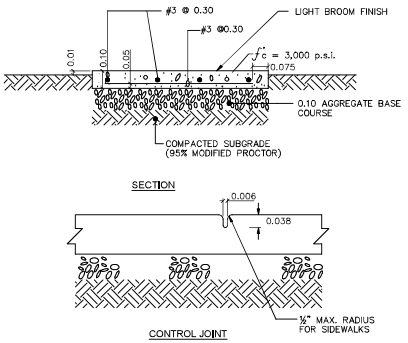
1. REFER TO PRHTA STANDARD DRAWINGS–ADA SERIES FOR ADDITIONAL DETAILS.

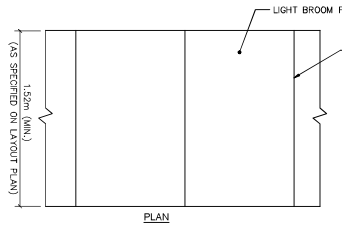


SECTION
SCALE: NTS
A
C700

HANDICAPPED RAMP (TYPE 3) DETAIL

SCALE: N.T.S.



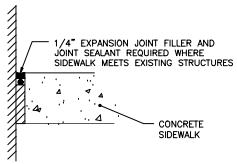


NOTE:

1. WHERE SIDEWALK ABUTS EXISTING OR PROPOSED FIXED OBJECTS (CURBS, CURB AND GUTTERS, CONCRETE PAVING, MANHOLES, OR BUILDINGS), INSTALL 12.7MM EXPANSION JOINT FILLER AND JOINT SEALANT.

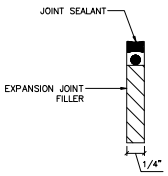
CONCRETE SIDEWALK DETAIL

SCALE: NTS



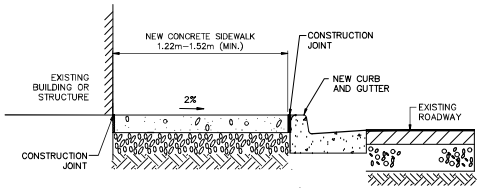
CONSTRUCTION JOINT

SCALE: NTS



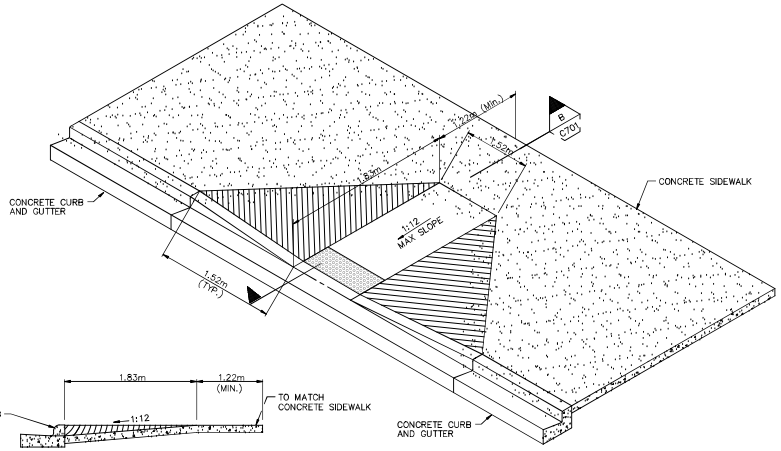
EXPANSION JOINT

SCALE: NTS



TYPICAL CONCRETE SIDEWALK SECTION

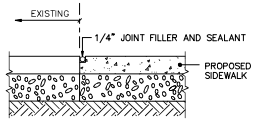
SCALE: NTS



SECTION
B
C701

HANDICAPPED RAMP (TYPE 1) DETAIL

SCALE: N.T.S.

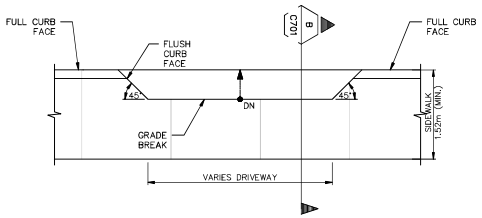


NOTE:

1. WHERE PROPOSED SIDEWALK ABUTS EXISTING SIDEWALKS INSTALL A 1/4" CONSTRUCTION JOINT WITH FILLER AND JOINT SEALANT.

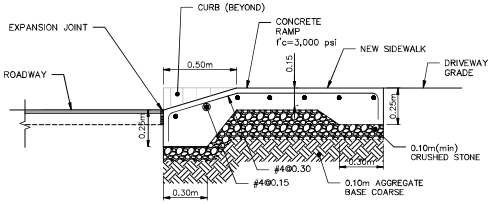
CONSTRUCTION JOINT DETAIL

SCALE: NTS



TYPICAL CURB CUT DRIVEWAY DETAIL

SCALE: N.T.S.



* NOTE:
1. TYPICAL DETAIL FOR ALL DRIVEWAYS AND VEHICULAR ENTRANCES WITHIN THE PROJECT LIMIT, UNLESS OTHERWISE NOTED.

SECTION
SCALE: NTS
B
C701

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PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO — PUERTO RICO

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DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

TYPICAL SECTIONS AND DETAILS

SHEET ID

C701

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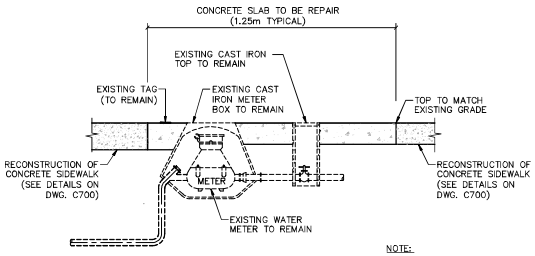
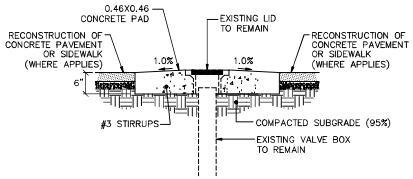


NOTE:

1. REPAIR OF EXISTING WATER METER CONCRETE SLAB APPLIES WHEN RECONSTRUCTION OF CONCRETE SIDEWALK AND WATER METER OCCURS (REFER TO DWGS. C200 TO C233 FOR SIDEWALK RECONSTRUCTION LOCATION).

TOP OF WATER METER REPAIR SECTION

SCALE: N.T.S.

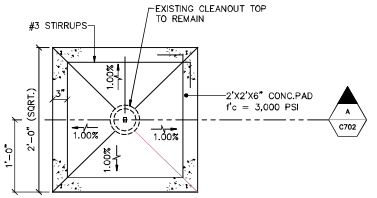


NOTE:

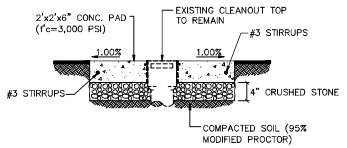
1. REPAIR OF EXISTING WATER METER CONCRETE SLAB APPLIES WHEN RECONSTRUCTION OF CONCRETE SIDEWALK OR CONCRETE PAVEMENT OCCURS (REFER TO DWGS. C200 TO C233 FOR RECONSTRUCTION LOCATION).

TOP OF VALVE REPAIR TYPICAL DETAIL

SCALE: N.T.S.



PLAN



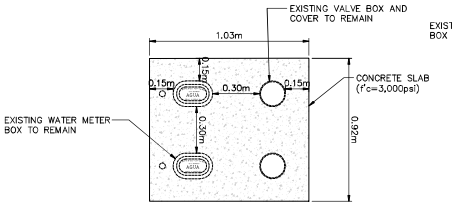
NOTE:

1. REPAIR OF EXISTING CLEANOUT CONCRETE SLAB APPLIES WHEN RECONSTRUCTION OF CONCRETE SIDEWALK OR CONCRETE PAVEMENT OCCURS (REFER TO DWGS. C200 TO C233 FOR RECONSTRUCTION LOCATION).

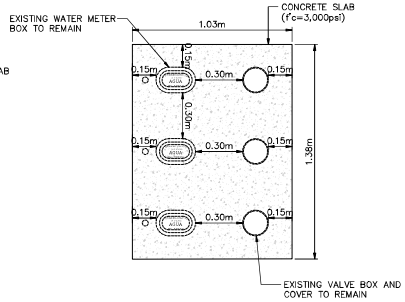
SECTION A C702

TOP OF CLEANOUT REPAIR TYPICAL DETAIL

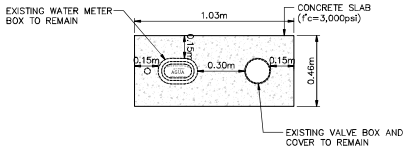
SCALE: N.T.S.



WATER METER PLAN (2–METERS)



WATER METER PLAN (3–METERS)



WATER METER PLAN (1–SINGLE METER)

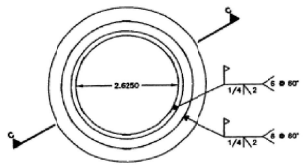
NOTE:

1. REPAIR OF EXISTING WATER METER CONCRETE SLAB APPLIES WHEN RECONSTRUCTION OF CONCRETE SIDEWALK AND EXISTING WATER METERS OCCURS (REFER TO DWGS. C200 TO C233 FOR SIDEWALK RECONSTRUCTION LOCATION).

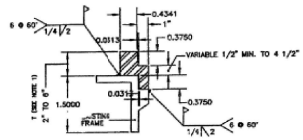
TYPICAL TOP OF WATER WATER METER TYPICAL DETAILS

SCALE: N.T.S.

MANHOLE ADJUSTMENT FOR P.R.A.S.A. STANDARD



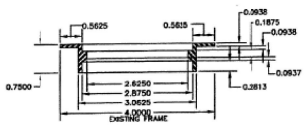
PLAN



1 RING CASTING FROM
2" TO 6" ADJUSTMENT

NOTES:

1. DIMENSION 'I' SHALL RANGE FROM 2" MIN. TO 6" MAX. IN 1/2" INCREMENTS.
2. RINGS SHALL BE GRAY CAST IRON, ASASTM DESIGNATION A-48, CLASS 30B.
3. WELDING SHALL COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE AMERICAN WELDING SOCIETY.
4. ALL GRAY CAST IRON PRODUCTS USED IN THE "TOP SERIES" OF THE CONCRETE MANHOLE SYSTEM SHALL BE MANUFACTURED BY FOUNDRIES THAT HAVE BEEN APPROVED BY THE MANUFACTURERS OF PRECAST CONCRETE MANHOLE SECTIONS. THE APPROVED LIST OF MANUFACTURERS AND PRODUCTS IS THE FIRST PAGE OF THE "TOP" SERIES.



SECTION C–C

TOP OF MANHOLE ADJUSTMENT TYPICAL DETAIL

SCALE: N.T.S.

NOTE:

1. MANHOLE ADJUSTMENT APPLIES WHEN RECONSTRUCTION OF CONCRETE PAVEMENT OCCURS (REFER TO DWGS. C200 TO C233 FOR RECONSTRUCTION LOCATION).

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TYPICAL
SECTIONS AND
DETAILS

SHEET ID

C702

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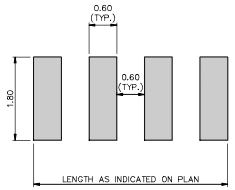
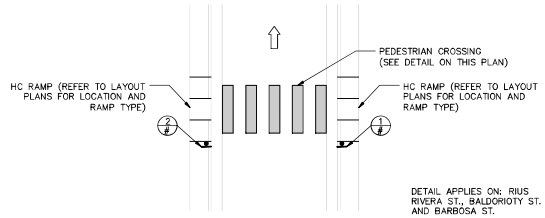
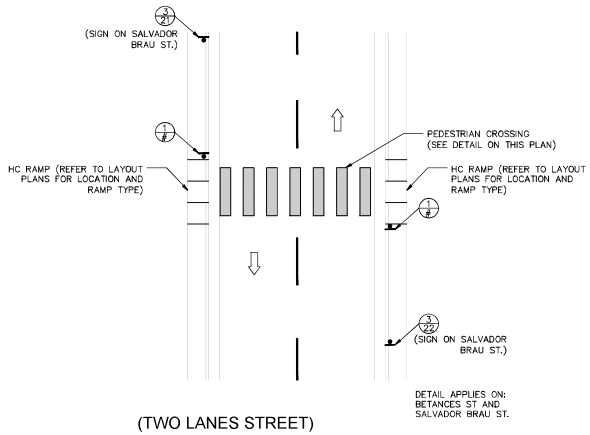


PEDESTRIAN CROSSING DETAIL
SCALE: NTS



(ONE LANE STREET)
TYPICAL PEDESTRIAN CROSSING DETAIL
SCALE: NTS



(TWO LANES STREET)
TYPICAL PEDESTRIAN CROSSING DETAIL
SCALE: NTS

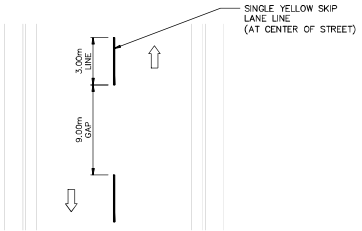
TRAFFIC SIGNS TABLE							
CODE No.	LOCATION No.	SIGN CODE	L E G E N D	SIZE OF SIGN PANELS	STRUCTURE TYPE	REFERENCE MANUAL	TOTAL ITEM
1	1,3,4,5,7, 8,9,10,11,12, 13,14,15,16, 17,19	W11-2 W16-7P		24" X 24" 24" X 12"	N/A	DTOP MANUAL 2020	16
2	2,5,6,18,20	W11-2 W16-7P		24" X 24" 24" X 12"	N/A	DTOP MANUAL 2020	5
3	21,22 (ONLY ON SALVADOR BRAU ST.)	W11-2 W16-9P	ADELANTE	24" X 24" 36" X 12"	N/A	DTOP MANUAL 2020	2

TRAFFIC SIGNING NOTES:

1. REMOVAL AND INSTALLATION OF TRAFFIC SIGNS ARE INCLUDED AS SUBSIDIARY OBLIGATION ON SPEC 613 PAY ITEM.
2. NEW TRAFFIC SIGNS SHALL BE IN COMPLIANCE WITH M.U.T.C.D. 2009 AND DPTW MANUAL 2020.
3. REMOVAL OF EXISTING SIGNS ARE INCLUDED ON SPECIAL PROVISION 913 REMOVAL OR RELOCATION OF EXISTING TRAFFIC SIGNS PAY ITEM.

PAVEMENT MARKING NOTES:

1. ALL PAVEMENT MARKING LINES AND SYMBOLS ARE INCLUDED ON SPEC. 608-THERMOPLASTIC PAVEMENT MARKING STRIPES (WHITE AND YELLOW) AND PAVEMENT MARKING LETTERS AND SYMBOLS PAY ITEMS.
2. BEGIN ALL LANE LINE MARKING AT STOP LINE, OR CROSSWALK UNLESS OTHERWISE NOTED.
3. ALL PAVEMENT MARKING SHALL BE REFLECTIVE THERMOPLASTIC PAINT.



(SALVADOR BRAU STREET(PR-103))
TYPICAL PAVEMENT MARKING DETAIL
SCALE: NTS

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SIGNING AND PAVEMENT MARKING DETAILS

SHEET ID

C703

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GENERAL NOTES:

1. NO WORK OTHER THAN MOBILIZATION, TRAFFIC CONTROL AND PROJECT OFFICE, SHALL BE PERFORMED UNTIL THE PROGRESS SCHEDULE IS APPROVED BY THE ENGINEER.

2. ALL TEMPORARY CONTROL DEVICES SHALL COMPLY WITH THE SUPPLEMENTAL SPECIFICATION NUMBER 638-"MAINTENANCE AND PROTECTION OF TRAFFIC" OF THE STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 2005 EDITION, AND WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES "MUTCD" 2009 (LATEST REVISED).

3. EQUIPMENT, MATERIALS AND OTHER DEVICES USED FOR CONSTRUCTION SHALL BE REMOVED FROM THE ROADWAY AFTER WORK HOURS AND SHALL BE STAGED A MINIMUM OF 10 METERS FROM THE TRAVEL WAY.

4. THE DRUM SPACING SHALL BE 2.50METERS. AN ALTERNATIVE FOR DRUMS IN NARROW STREET SEGMENTS, CONTRACTOR CAN USE ORANGE CONES, 28-IN HEIGHT MINIMUM AS PER MUTCD 2009, SECTION 6F-64.

5. ANY ALTERATION TO THE SCHEDULE THAT MAY IMPROVE TRAFFIC OPERATIONS WITHIN THE CONSTRUCTION AREA, IN ACCORDANCE WITH THE CURRENT MUTCD (2009) AND WITH NO ADDITIONAL COST TO THE AUTHORITY, SHALL BE SUBMITTED TO THE ENGINEER AT LEAST TWENTY ONE(21) CALENDAR DAYS IN ADVANCE TO THE PROPOSED DATE OF IMPLEMENTATION FOR REVIEW. IF THE PROPOSED ALTERATION IS APPROVED IT SHALL BE IMPLEMENTED AS DIRECTED BY THE ENGINEER.

6. THE CONTRACTOR CAN PERFORM, WITH THE APPROVAL OF THE ENGINEER, SEVERAL SIMULTANEOUS ACTIVITIES WITHIN A STAGE, AND AS PERMITTED BY THE CONTRACT PROPOSAL QUANTITIES ON THE TRAFFIC CONTROL ITEMS.

7. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER THE INSTALLATION OF TEMPORARY TRAFFIC CONTROL DEVICES FOR EACH PHASE AT LEAST FOURTEEN (14) CALENDAR DAYS IN ADVANCE FOR THE RELEASE OF PUBLIC NOTICE. THE CONTRACTOR SHALL NOT COMMENCE ANY OF THE CONSTRUCTION PHASES WITHOUT A PUBLIC NOTICE IS ISSUED OR WITHOUT DIRECT CONSENT FROM THE ENGINEER.

8. THE CONSTRUCTION SIGNS INSTALLATION SHOULD BE IN ACCORDANCE TO THE TEMPORARY TRAFFIC SIGNS MOUNTING DETAILS, SHEET NO, MPT-23 OF THE PRHTA STANDARD DRAWING REV, JUNE 2012.

9. THE CONTRACTOR SHALL FURNISH TEMPORARY TRAFFIC CONTROL DEVICES THAT MEET THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT (NCHRP) 350 CRITERIA FOR THE APPLICABLE CRASH WORTHINESS STANDARD.

10. ALL TRAFFIC CONTROL SIGNS DETERMINED BY THE ENGINEER TO BE UNNECESSARY FOR THE APPLICABLE CONSTRUCTION OPERATION SHALL BE IMMEDIATELY COVERED IN ITS ENTIRETY WITH NON ABRASIVE MATERIAL AND SHALL BE INSPECTED DURING DAY AND NIGHT TIME TO ENSURE THAT THE SIGN IS NOT READABLE. THIS WORK IS A SUBSIDIARY OBLIGATION OF THE CONTRACT UNDER EXISTING PAY ITEMS.

11. DURING THE CONSTRUCTION OPERATIONS, THE CONTRATOR SHALL TAKE ALL THE NECESSARY PRECAUTIONS AND MEASURES TO AVOID FALLING DEBRIS, TOOLS, EQUIPMENT OR ANY OTHER MATERIALS INTERFERE OR IMPACT THE MOTORING PUBLIC IN THE ROADWAY. ALL THE MATERIALS, LABOR EQUIPMENT, AND WORK NECESSARY FOR IMPLEMENTING THIS REQUIREMENT IS SUBSIDIARY OBLIGATION OF THE CONTRACT UNDER EXISTING PAY ITEMS.

12. THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO ADJACENT PROPERTIES DURING CONSTRUCTION, THIS WORK WILL REQUIRE COORDINATION WITH BUSINESSES AND PRIVATE OWNERS, ALL THE MATERIALS, LABOR, EQUIPMENT, AND WORK NECESSARY FOR IMPLEMENTING THIS REQUIREMENT IS SUBSIDIARY OBLIGATION OF THE CONTRACT UNDER EXISTING PAY ITEMS.

13. NO EXCAVATION AND/OR PAVEMENT DROP-OFF SHALL REMAIN OPEN WITHIN THE TRAVELED WAY WHEN THE CONTRACTOR OR ITS PERSONNEL IS NOT WORKING AND PHYSICALLY PRESENT AT THE WORK SITE.

14. IN CASE THAT THE WORKS AFFECTED THE EXISTING LUMINARY THE CONRACTOR SHALL PROVIDE ADEQUATE ILLUMINATION IN THE AFFECTED AREA BUT THE GLARE OF THE SAME NO AFFECT THE VISIBILITY OF THE DRIVERS.

15. THE CONTRACTOR SHALL RETURN ALL AREAS DISTURBED BY TEMPORARY DETOURS TO THEIR ORIGINAL STATE.

15. RELOCATE ALL UTILITIES PRIOR TO THE PERFORMANCE OF ANY CONSTRUCTION PHASE. THIS ACTIVITY SHALL BE CLOSELY COORDINATED WITH THE CORRESPONDING UTILITY AGENCIES AND DTOP REGIONAL OFFICE SO AS TO PERMIT THE CONSTRUCTION AS SCHEDULED.

16. ALL TRENCH EXCAVATIONS MUST BE BACKFILLED THE SAME DAY BY THE END OF THE WORKSHIFT. IF NOT, THE TRENCH SHALL BE COVERED WITH A SUITABLE STEEL PLATE.

17. ALL TRAFFIC CONTROL DEVICES SHALL BE CLEANED, REPAINTED, REFLECTORIZED OR REPLACED AS NECESSARY TO PROVIDE ADEQUATE VISIBILITY AND LEGIBILITY AT ALL TIMES.

18. THE PUERTO RICO HIGHWAY AND TRANSPORTATION AUTHORITY IT DOES RESERVES THE RIGHT TO STOP THE WORKS AT ANY TIME IF THE CONTRACTOR DO NOT COMPLY WITH THE MAINTENANCE OF TRAFFIC AND THE SAFETY REGULATIONS.

CONSTRUCTION SCHEDULE

THE FOLLOWING CONSTRUCTION SCHEDULE AND SPECIAL INSTRUCTIONS SHALL BE FOLLOWED. IN ORDER TO MAINTAIN TRAFFIC FLOW WITH "THE LEAST POSSIBLE INTERFERENCE FROM CONSTRUCTION OPERATIONS".

TYPICAL APPLICATIONS ARE SUBMITTED FOR THE TEMPORARY TRAFFIC CONTROL ACTIVITIES FOR A VARIETY OF SITUATIONS COMMONLY ENCOUNTERED. IT IS REQUIRED FROM THE ENGINEER TO ADJUST THESE GUIDELINES TO FIELD CONDITIONS.

SPECIFIC SITUATIONS NOT COVERED BY THESE APPLICATIONS SHALL BE BROUGHT UP TO THE ENGINEER FOR APPROPIATE DIRECTION AND CLARIFICATION 10 DAYS BEFORE THE BEGINNING OF THE CONSTRUCTION WORK IN THAT AREA.

CONSTRUCTION:

1. IMPLEMENT THE WORK ZONE TEMPORARY TRAFFIC CONTROL IN ACCORDANCE WITH THE MAINTENANCE OF TRAFFIC INDICATED ON THE PLANS

2. THE DETAILS SHOWN SHALL BE USED IN BOTH DIRECTIONS.

TRAFFIC:

1. THE TRAFFIC WILL BE FLOWING AS INDICATED ON THE MAINTENANCE OF TRAFFIC USED FOR THE CONSTRUCTION AREA.

2. ALL WORK TO BE PERFORMED SHALL BE COORDINATED WITH THE TRAFFIC ENGINEERING OFFICE PERSONNEL.

3. NO WORK SHALL BE ALLOWED DURING PEAK HOURS. THE PEAK HOURS ARE DEFINED AS 7:00 AM - 8:00 AM AND 3:00 PM - 5:00 PM FROM MONDAY TO THURSDAY AND 7:00 AM - 8:00 AM AND 3:00 PM - 7:00 PM ON FRIDAYS.

4. ALL ACTIVITIES PROPOSED FOR THE PROJECT THAT AFFECT THE NORMAL FLOW OF TRAFFIC, SHALL BE COORDINATED WITH ALL PROJECTS THAT ARE WITHIN A COVERAGE RADIUS OF TWO MILES OF THE WAY SO THAT THEY DO NOT AFFECT EACH OTHER.

5. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER THE ACCESS POINTS FOR CONSTRUCTION VEHICLES. INSTALL SIGN W8-6 (TRUCK CROSSING - 36" X 36") TO ALERT ROAD USERS OF LOCATIONS WHERE UNEXPECTED TRAVEL BY CONSTRUCTION VEHICLES MIGHT OCCUR.

LEGEND:

- TRAFFIC SIGN LOCATION
- CODE NUMBER / LOCATION NUMBER
- PLASTIC DRUMS
- AREA UNDER CONSTRUCTION
- TRAFFIC FLOW
- FLAGGER

CONSTRUCTION SCHEDULE TABLE

CONSTRUCTION PHASE	ACTIVITY TYPE DESCRIPTION	MOT APPLICATION	WORKING HOURS
ALL PHASES (SEE TABLE OF PHASES)	MOT IMPLEMENTATION 1. PROJECT SIGN INSTALLATION. 2. INSTALLATION OF MOT DEVICES: TEMPORARY CONSTRUCTION SIGNS, DRUMS, AND TEMPORARY CONCRETE BARRIERS (WHERE APPLIES).	I, II AND III	ON WEEKDAYS, DURING OFF-PEAK HOURS (WORKING HOURS TO BE COORDINATED WITH THE MUNICIPALITY OF CABO ROJO PRIOR TO COMMENCE THE CONSTRUCTION WORKS)
	DEMOLITION WORKS 1. DEMOLITION OF CONCRETE PAVEMENT 2. DEMOLITION OF SIDEWALKS, CURB AND GUTTERS AND CONCRETE GUTTER	I, II, III AND IV	ON WEEKDAYS, DURING OFF-PEAK HOURS (WORKING HOURS TO BE COORDINATED WITH THE MUNICIPALITY OF CABO ROJO PRIOR TO COMMENCE THE CONSTRUCTION WORKS)
	PAVEMENT REHABILITATION WORKS 1. REPLACEMENT OF CONCRETE PAVEMENT 2. NEW ASPHALT PAVEMENT (WHERE APPLIES) 3. NEW SIDEWALKS, CURB AND GUTTER AND HC RAMPS 4. NEW CONCRETE GUTTER 5. RESET TOP OF MANHOLES	I, II, III AND IV	ON WEEKDAYS, DURING OFF-PEAK HOURS (WORKING HOURS TO BE COORDINATED WITH THE MUNICIPALITY OF CABO ROJO PRIOR TO COMMENCE THE CONSTRUCTION WORKS)
	REPLACEMENT OF LIGHTING SYSTEM 1. REMOVAL OF EXISTING LIGHTING SYSTEM ARMS AND LAMPS (WHERE APPLIES) 2. INSTALLATION OF NEW LIGHTING SYSTEM LAMPS/ARMS AND CONNECTION	I, II AND III	ON WEEKDAYS, DURING OFF-PEAK HOURS (WORKING HOURS TO BE COORDINATED WITH THE MUNICIPALITY OF CABO ROJO PRIOR TO COMMENCE THE CONSTRUCTION WORKS)
	NEW TRAFFIC SIGNING AND PAVEMENT MARKING 1. REMOVAL OF EXISTING TRAFFIC SIGNS 2. INSTALLATION OF NEW TRAFFIC SIGNS 3. INSTALLATION OF NEW PAVEMENT MARKINGS	I, II AND III	ON WEEKDAYS, DURING OFF-PEAK HOURS (WORKING HOURS TO BE COORDINATED WITH THE MUNICIPALITY OF CABO ROJO PRIOR TO COMMENCE THE CONSTRUCTION WORKS)

THE PROJECT WILL BE IMPLEMENTED BY THE PHASES SHOWN ON THIS TABLE. THE CONTRACTOR SHALL DEVELOP A CONSTRUCTION SCHEDULE FOR THE EVALUATION AND APPROVAL OF THE PROJECT ENGINEER CONSIDERING THE ORDER OF THE PHASES. THE CONTRACTOR CAN MODIFY THAT ORDER BY PRESENTING RECOMMENDATIONS IN THE CONSTRUCTION SCHEDULE.

* REFER TO DWGS. MOT-2 TO MOT-3 FOR MOT TYPICAL APPLICATIONS DETAILS AND SIGN TABLE.

DISTANCE BETWEEN SIGNS

ROAD	A	B	C
PR-103	100FT (30m)	100FT (30m)	100FT (30m)
MUNICIPAL ROAD	100FT (30m)	100FT (30m)	100FT (30m)

DISTANCE FOR TEMPORARY TRAFFIC CONTROL ZONE (mts)

SPEED LIMIT	TAPER	BUFFER	TERMINATION AREA
25MPH	50FT (15m)	115FT (35m)	50FT (15m)

CONSTRUCTION PHASES TABLE

PHASE ID	STREETS	TOTAL LENGTH(m)
PHASE 1	JOSE DE DIEGO ST./ BALDORIOTY ST.	912.0
PHASE 2	HENNA ST./ BETANCES ST.	645.0
PHASE 3	HOSTOS ST./ MARIANO QUIÑONES ST.	606.0
PHASE 4	RUIS RIVERA ST./ JIMENEZ ST.	644.0
PHASE 5	MANUEL F. ROSSY ST./ RUIS BELVIS ST.	631.0
PHASE 6	ANGEL FRANCO ST./ GEN.ANTONIO MACEO ST./ ZOILO STGO. ST	525.0
PHASE 7	LABRA ST./ PUEBLO NUEVO STS./ MAXIMO GOMEZ ST.	837.0
PHASE 8	BARBOSA ST.	496.0
PHASE 9	MUÑOZ RIVERA ST.	546.0
PHASE 10	SALVADOR BRAU ST./ SALVADOR MESTRE ST.	660.0

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/10/22
2	60% DESIGN DEVELOPMENT	03/31/23
3	90% DESIGN DEVELOPMENT	05/22/23
4	100% DESIGN DEVELOPMENT	08/04/23

DATE ISSUED:	03/22/23
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	YOP
BRA PROJECT NUMBER:	22023

SHEET TITLE

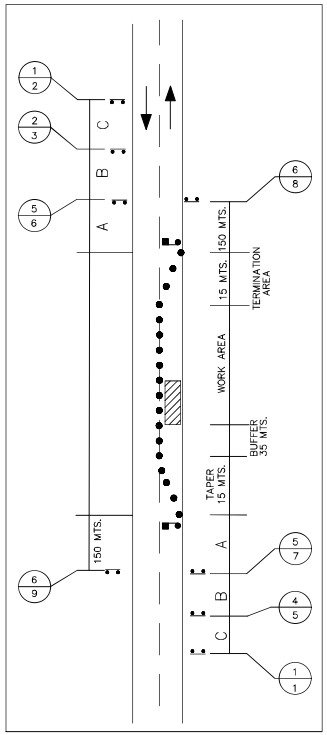
MAINTENANCE OF TRAFFIC LEGEND, NOTES AD CONSTRUCTION SCHEDULE

SHEET ID

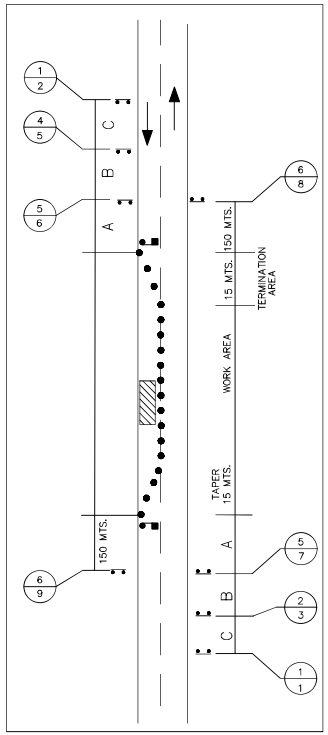
MOT1

7/6/2023 3:15:46 PM

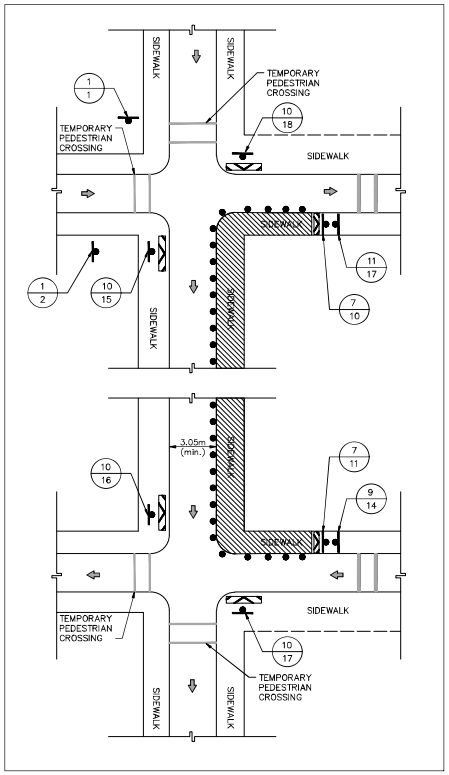
TYPICAL APPLICATION I
RIGHT LANE CLOSURE



TYPICAL APPLICATION II
LEFT LANE CLOSURE



TYPICAL APPLICATION III
PEDESTRIAN CROSSING CLOSURE AND DETOURS



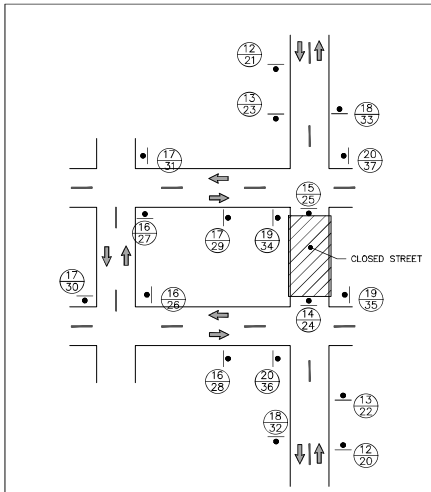
LEGEND:

- TRAFFIC SIGN LOCATION
- CODE NUMBER / LOCATION NUMBER
- PLASTIC DRUMS
- AREA UNDER CONSTRUCTION
- TRAFFIC DIRECTION
- FLAGGER
- TYPE 3 BARRICADE

NOTES:

1. FOR MAINTENANCE OF TRAFFIC NOTES & LEGEND REFER TO MOT-1.
2. MAINTENANCE OF TRAFFIC APPLICATIONS SHALL COMPLY WITH MUTCD 2009 MANUAL.
3. REFER TO DWG. MOT-3 FOR CONSTRUCTION SIGNS TABLE.

TYPICAL APPLICATION IV
DETOUR FOR CLOSED STREET



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PROJECT INFORMATION

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REHABILITACION
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DATE ISSUED:	03/22/23
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	YOP
BRA PROJECT NUMBER:	22023

SHEET TITLE

MAINTENANCE OF TRAFFIC TYPICAL APPLICATIONS

SHEET ID

MOT2

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CONSTRUCTION SIGNS:

CODE No.	LOCATION No.	SIGN CODE	L E G E N D	SIZE OF SIGN PANELS	STRUCTURE TYPE	REFERENCE MANUAL	TOTAL ITEM
1	1,2	W21-4		30" X 30"	N/A	SEE D.T.P.W. MANUAL 2020	2
2	3	W20-5 (I)		36" X 36"	N/A	SEE D.T.P.W. MANUAL 2020	1
3	4	W20-5 (D)		36" X 36"	N/A	SEE D.T.P.W. MANUAL 2020	1
4	5	W20-4		36" X 36"	N/A	SEE D.T.P.W. MANUAL 2020	1
5	6,7	W20-7 (A)		30" X 30"	N/A	SEE D.T.P.W. MANUAL 2020	2
6	8,9	G20-2		40" X 16"	N/A	SEE D.T.P.W. MANUAL 2020	2
7	10,11	W11-2(I) W16-7P		18"X18" 24"X12"	N/A	SEE MUTCD 2009	2
8	12,13	R9-9		24" X 18"	N/A	SEE MUTCD 2009 & GUIDE SIGN DETAIL	2
9	1	R9-11		36" X 30"	N/A	SEE MUTCD 2009 & GUIDE SIGN DETAIL	1
10	15,16,18,19	R9-10		42" X 24"	N/A	SEE MUTCD 2009 & GUIDE SIGN DETAIL	4
11	17	R9-11		36" X 30"	N/A	SEE MUTCD 2009 & GUIDE SIGN DETAIL	1
12	20,21	W20-3		36" X 36"	N/A	SEE D.T.P.W. MANUAL 2020	2
13	22,23	W20-2		36" X 36"	N/A	SEE D.T.P.W. MANUAL 2020	2

CODE No.	LOCATION No.	SIGN CODE	L E G E N D	SIZE OF SIGN PANELS	STRUCTURE TYPE	REFERENCE MANUAL	TOTAL ITEM
14	24	R11-2 M4-10(L)		36" X 24" 48" X 18"	N/A	SEE D.T.P.W. MANUAL 2020	1
15	25	R11-2 M4-10(L)		36" X 24" 48" X 18"	N/A	SEE D.T.P.W. MANUAL 2020	1
16	26,27,28	M4-9(R)		30" X 24"	N/A	SEE D.T.P.W. MANUAL 2020	3
17	29,30,31	M4-9(R)		30" X 24"	N/A	SEE D.T.P.W. MANUAL 2020	3
18	32,33	M4-8a		24" X 18"	N/A	SEE D.T.P.W. MANUAL 2020	2
19	34,35	R3-1		30"X30"	N/A	SEE D.T.P.W. MANUAL 2020	2
20	36,37	R3-1		30"X30"	N/A	SEE D.T.P.W. MANUAL 2020	2

NOTES:

1. FOR MAINTENANCE OF TRAFFIC NOTES & LEGEND REFER TO DWG. MOT/1
2. MAINTENANCE OF TRAFFIC APPLICATIONS SHALL COMPLY WITH MUTCD 2009 MANUAL.

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DATE ISSUED:	03/22/23
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22023

SHEET TITLE

MAINTENANCE OF TRAFFIC CONSTRUCTION SIGN TABLE

SHEET ID

MOT3

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CONSTRUCTION PHASES TABLE		
PHASE ID	STREETS	LEGEND
PHASE 1	JOSE DE DIEGO ST./ BALDORIOTY ST.	
PHASE 2	HENNA ST./ BETANCES ST.	
PHASE 3	HOSTOS ST./ MARIANO QUIÑONES ST.	
PHASE 4	RUIS RIVERA ST./ JIMENEZ ST.	
PHASE 5	MANUEL F. ROSSY ST./ RUIS BELVIS ST.	
PHASE 6	ANGEL FRANCO ST./ GEN.ANTONIO MACEO ST./ZOILO STGO. ST.	
PHASE 7	LABRA ST./ PUEBLO NUEVO STS./ MAXIMO GOMEZ ST.	
PHASE 8	BARBOSA ST.	
PHASE 9	MUÑOZ RIVERA ST.	
PHASE 10	SALVADOR BRAU ST./ SALVADOR MESTRE ST.	

NOTES:

1. CONSTRUCTION PHASES SHOWN ON THIS PLAN ARE SUGGESTED FOR THE SEQUENCE OF THIS PROJECT FOR ONE CONTRACTOR.
2. IF THE PROJECT IS DIVIDED BY DIFFERENT CONTRACTORS, EACH CONTRACTOR SHALL SUBMIT THE CONSTRUCTION SEQUENCE FOR REVISION AND APPROVAL OF THE OWNER AND PROJECT ENGINEER.
3. MAINTENANCE OF TRAFFIC APPLICATIONS SHALL COMPLY WITH MUTCD 2009 MANUAL.
4. THE CONSTRUCTION PHASES INCLUDED ON THIS TABLE, PROPOSE TO WORK THE STREETS ON EACH PHASES SIMULTANEOUSLY.

N

GENERAL SITE PLAN
SCALE: 1:1,250

5 0 10 20 50 80
SCALE: 1:1,250

7/8/2020 3:15:46 PM

OWNER

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DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

MOT
CONSTRUCTION
PHASES PLAN

SHEET ID

MOT4

LUMA - Pole - Primary - Concrete - Square/Rectangular

LUMA - Pole - Primary - Concrete - Self Support Base

LUMA - Transformer - x3 - 3ϕ

LUMA - Transformer - x2 - 3ϕ

LUMA - Transformer - x1 - 1ϕ

Existing Luminaire - AEE/LUMA

Existing Luminaire - MUNICIPAL - Pole

Existing Luminaire - MUNICIPAL - Wall

LUMINAIRES TOTAL :	177

CONDITION	Quantity
LUMINAIRE - BROKEN BULB	0
LUMINAIRE - BROKEN BASE	0
LUMINAIRE - BROKEN SHADE	2
LUMINAIRE - VERY DIRTY SHADE	3
LUMINAIRE - FLASHING	3
LUMINAIRE - INCLINED BODY	5
LUMINAIRE - INCLINED POLE	24
LUMINAIRE - MISSING SHADE	0
LUMINAIRE - NEST BUILT	0
LUMINAIRE - STAYS OFF	10
LUMINAIRE - STAYS ON WITH	0
LUMINAIRE - PAINT	145
LUMINAIRE - WIRES ACCESS	0

LUMINAIRES CONDITION CODES

DESCRIPTION	CONDITION CODE	RECOMENDED TROUBLESHOOTING
LUMINAIRE - BROKEN BULB	LB	Replace bulb
LUMINAIRE - BROKEN BASE	LBB	Replace Base
LUMINAIRE - BROKEN SHADE	LBS	Replace Shade
LUMINAIRE - VERY DIRTY SHADE	LDS	Replace Shade
LUMINAIRE - FLASHING	LFS	Secondary Electrical Line Fault Troubleshooting is required if continues flashing after replacement. Look for faulted or loosed connections. Check light
LUMINAIRE - INCLINED BODY	LIB	After checking correct body/pole coupling, replace body.
LUMINAIRE - INCLINED POLE	LIP	After checking pole base is well tighted/secured, replace pole because pole material does not stands force to bend it back.
LUMINAIRE - MISSING SHADE	LMS	Replace shade
LUMINAIRE - NEST BUILT	LNB	Clean Body or Shade
LUMINAIRE - STAYS OFF	LOF	Replace bulb, if bulb continues off after proper voltage is applied, secondary electrical line troubleshooting is required to find electrical fault or line disconnected. Check light sensor.
LUMINAIRE - STAYS ON WITH SUNLIGHT	LON	Replace or calibrate light sensor.
LUMINAIRE - PAINT Refer to Page E001 for data about type of paint and materials.	LPT	Entired shade (plastic) must be covered or disasembled before paint application. We recommend to disasemble entire pole and move it to a proper place for painting to avoid damage to vehicles or other properties. Air spray should be used if entire pole is disasembled and painted in a proper place. Type of paint must be applied guided by manufacturer.
LUMINAIRE - WIRES ACCESS	LWA	Replace missing cap or tight it correctly with correct screws.
POLE - BROKEN	PB	Replace pole because pole material does not stands force to bend it back or weld
POLE - BROKEN TOP	PBT	After checking correct body/pole coupling, replace body/top.
TREE TRIMMING - MAINTENANCE	TTM	Tree trimming correctly for a correct light distribution. Tree Branches must be at least 10 fts appart.
TREE TRIMMING - REQUIRED	TTR	Tree trimming correctly for a correct light distribution. Tree Branches must be at least 10 fts appart.

OWNER

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SEAL

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	
3	90% DESIGN DEVELOPMENT	3/27/23
4	90% ELECTRICAL ASSESSMT	4/19/23
5	100% ELECTRICAL ASSESSMT	8/31/23

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REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LEGEND
AND
NOTES

SHEET ID

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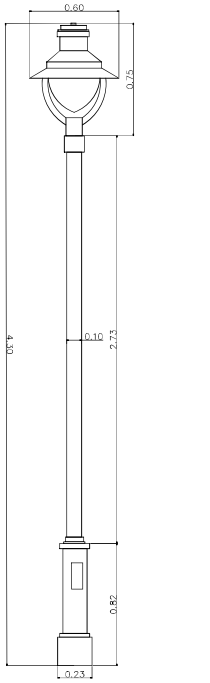
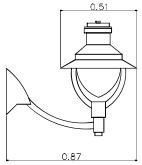
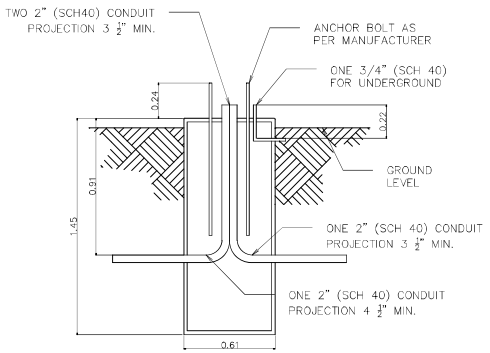
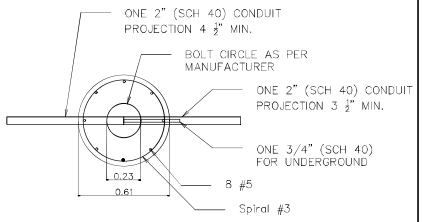






SIDE VIEW



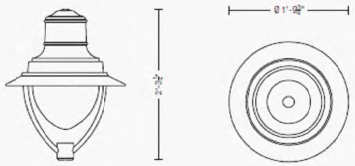
TOP VIEW

ORIGINAL LUMINAIRE SIMILAR TO 4218.223 from NERI

LIGHT 21

LED Source - Comfort range - Contemporary
Voltage = 120-277,50/60 Hz

EPA = 0.76ft²
Weight = 25.35 lb (11.5 Kg)
Height = 2'- 3/4"
Diameter = 1' - 9 3/4"



Compliance:
UL Standard 1598 CSA C22.2 no.250.0-8

MODEL:
code sample: PU210L021P202

Mounting	Series	Optic system	CCT	Lumen output	Driver function
PU = Head post	210L= Series with drop screen	02 = type III Very Short 06 = type V Short	1 = 3,000K 3 = 4,000K	P2 = 2,500 lm P4 = 3,500 lm P6 = 4,500 lm	02 = 1-10V + NCL 06 = DALI + NCL 14 = 6 hours aut. flux red. + NCL 71 = Manual dimming

SPECIFICATIONS:

Construction:
- Upper frame shaped and a visor in aluminum sheet.
- Lower frame ring in aluminum for the support of the Led module and screen.
- Suitable for wet location (IP 66).

Materials:
- Die-cast aluminium (ASTM B179-82)
- Sheet aluminium
- Hot galvanized steel
- Screen in acrylic frosted (shock resistance IK06).
- Brass and stainless steel screws.

Finish:
- Standard colour is dark grey NERI type.
- Information about paint steps used on this product in specific technical sheet.

Fastening:
- Upright installation on head post or bracket.
- Hole diam.1,10" for attachment to the support.

Operation and maintenance:
- Follow the instructions for operation and maintenance.
- No maintenance is required, except a periodic cleaning of the screen from dust.

TECHNICAL DATA:

Electrical:
- Voltage: 120-277 V (universal)
- Rated power: from 26W to 53W
- Frequency: 50/60 Hz.
- Protection rating: IP43
- Operating temp.: -22F°+104F°(-30°C +40°C).
- Electronic ballast with self-diagnostic functions and monitoring of over temperatures.
- Estimate life: B10 at 80.000 hours.

Optical Features:
- Light source: power leds.
- Lumen output: from 2.500 to 4.500 lm
- Colour temperature: 3.000K or 4.000K
- Chromatic Rendering Index: CRI>70.
- Estimated life: 80.000 hours (L85 - Ta 25°C).
- Protection rating: IP66 (Optic).
- Heat sink in aluminium extruded for a optimal control of temperature with electronic sensor on LED plate for the control of over temperatures.
- Refractive lens in PC (UV resistant).
- IES classification: cat off.
- Shock resistance of screen: IK10

On demand features
- Painting: colour of RAL range.
- Information about paint steps used on this product in specific technical sheet.

CONFIGURATION TABLES:

Configuration tables of luminous fluxes.
The efficacy (lm/W) on table refers to the complete system.

3,000 K - Colour temperature			
Code	lm output	Watt	lm/W
1P2	2,500	27	90
1P4	3,500	39	88
1P6	4,500	53	83

4,000 K - Colour temperature			
Code	lm output	Watt	lm/W
3P2	2,500	26	94
3P4	3,500	36	95
3P6	4,500	48	92

Configuration of driver functions

Code	Driver function
02	1-10V control + constant flux control (1-10V + NCL)
06	DALI control + constant flux control (DALI + NCL)
14	6 hours aut. flux reduction -30% + constant flux control (6H NVL + NCL)
71	Optional: Internal manual dimming control allowing up to 50% light reduction. Setup by qualified operator and with powerline disconnected.

Note:
- NCL: constant flux control is standard with all driver functions

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SHEET TITLE

LIGHTING
POLES
DETAILS

SHEET ID

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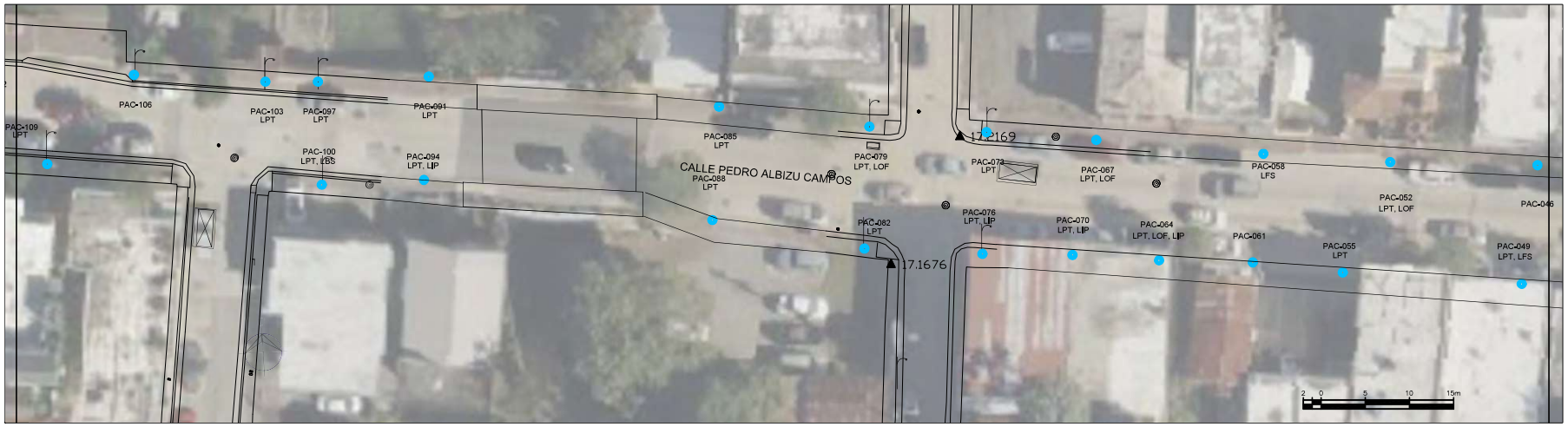

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PROJECT INFORMATION

PR-CRP-000815
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO — PUERTO RICO

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REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

CALLE PEDRO
ALBIZU CAMPOS

SHEET ID

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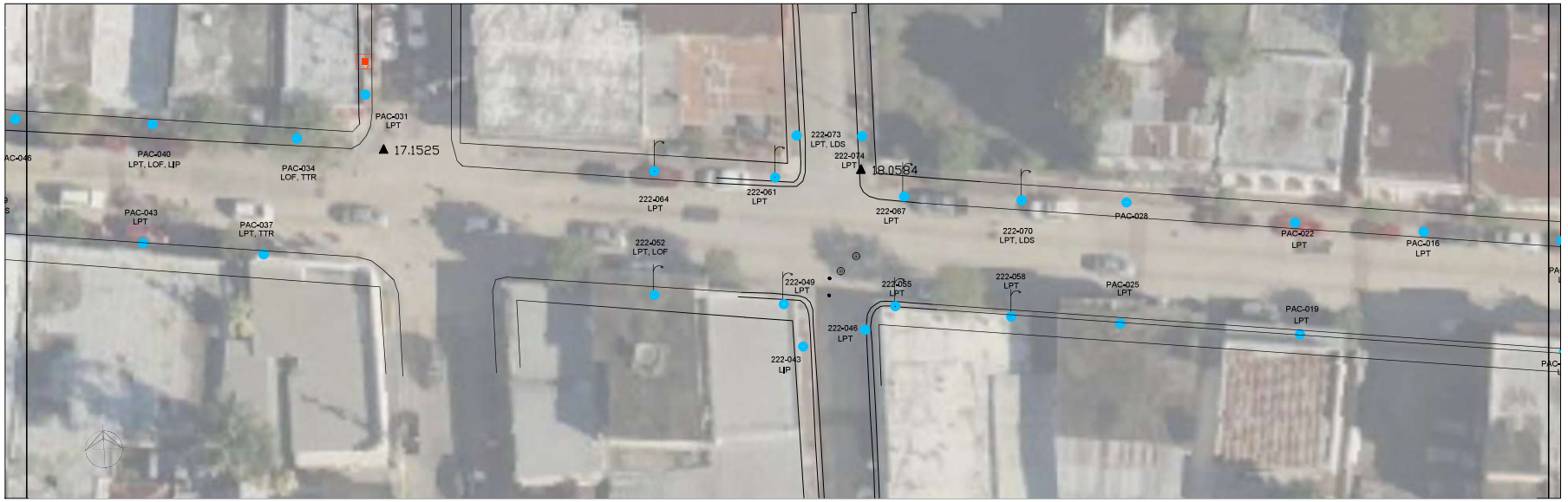

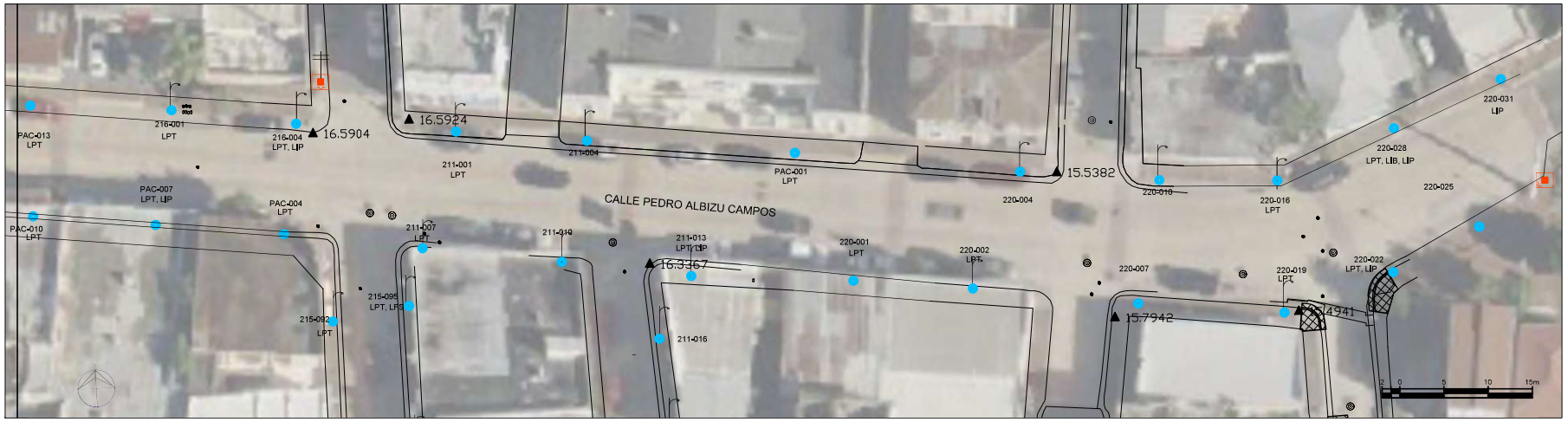

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CALLE PEDRO
ALBIZU CAMPOS

SHEET ID

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LAYOUT PLAN
SCALE: 1:200

2 0 5 10 15m
SCALE: 1:200

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LAYOUT PLAN
CALLE
BALDORIOTY

SHEET ID

E200

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SCALE 1:200

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PROJECT INFORMATION

PR-CRP-000815
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO — PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	
3	90% DESIGN DEVELOPMENT	3/27/23
4	90% ELECTRICAL ASSESSMT	6/19/23
5	100% ELECTRICAL ASSESSMT	8/31/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE
BALDORIOTY

SHEET ID

E201

7/8/2020 3:15:46 PM C:\Users\Luz M. Rodriguez\OneDrive - Benitez Ramos & Asociados\02-Design Projects\2021\PR-CaboRojo-A&EMejorasCalles101-Documents\Revised Docs & Drawings\2023-06-14_ElectricalFinalE200-201-202.dwg

N

LAYOUT PLAN
SCALE: 1:200

2 0 5 10 15m
SCALE: 1:200

LEGEND

- Existing Luminaire - AEE/LUMA
- Existing Luminaire - MUNICIPAL - Pole
- Existing Luminaire - MUNICIPAL - Wall
- LUMA - Pole - Primary - Concrete - Square/Rectangular
- LUMA - Pole - Primary - Concrete - Self Support Base
- LUMA - Transformer - x3 - 3ϕ
- LUMA - Transformer - x2 - 3ϕ
- LUMA - Transformer - x1 - 1ϕ

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO — PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	
3	90% DESIGN DEVELOPMENT	3/27/23
4	90% ELECTRICAL ASSESSMT	4/19/23
5	100% ELECTRICAL ASSESSMT	8/31/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

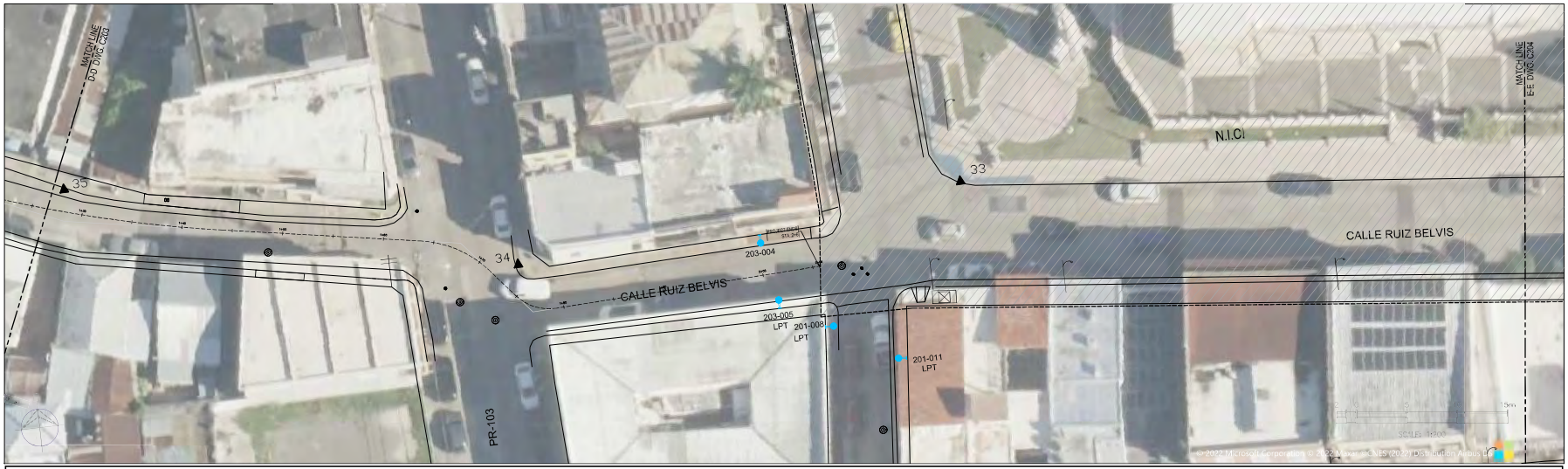
LAYOUT PLAN
CALLE
BALDORIOTY

SHEET ID

E202

7/8/2020 3:15:46 PM C:\Users\Luz M. Rodriguez\OneDrive - Benitez Ramos & Asociados\02-Design Projects\2021\PR-CaboRojo-A&EMejoraCalles101-Documents\Revised Docs & Drawings\2023-08-14_ElectricalFinalE200-201-202.dwg

LAYOUT PLAN
SCALE 1:200



LEGEND

- Existing Luminaire - AEE/LUMA
- Existing Luminaire - MUNICIPAL - Pole
- Existing Luminaire - MUNICIPAL - Wall
- LUMA - Pole - Primary - Concrete - Square/Rectangular
- LUMA - Pole - Primary - Concrete - Self Support Base
- LUMA - Transformer - x3 - 3ϕ
- LUMA - Transformer - x2 - 3ϕ
- LUMA - Transformer - x1 - 1ϕ

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
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2	60% DESIGN DEVELOPMENT	
3	90% DESIGN DEVELOPMENT	3/27/23
4	90% ELECTRICAL ASSESSMT	4/19/23
5	100% ELECTRICAL ASSESSMT	8/31/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE RUIZ
BELVIS

SHEET ID

E203

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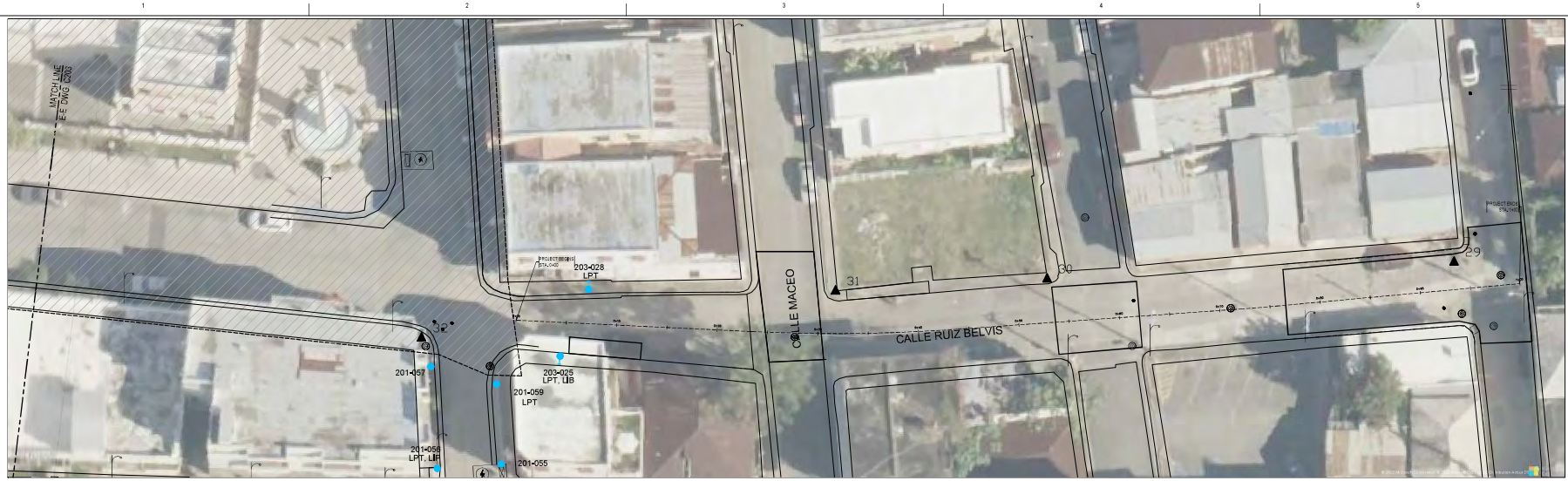

N

LAYOUT PLAN
SCALE: 1:200

2 0 5 10 15m
SCALE: 1:200

LEGEND

- Existing Luminaire - AEE/LUMA
- Existing Luminaire - MUNICIPAL - Pole
- Existing Luminaire - MUNICIPAL - Wall
- LUMA - Pole - Primary - Concrete - Square/Rectangular
- LUMA - Pole - Primary - Concrete - Self Support Base
- LUMA - Transformer - x3 - 3ϕ
- LUMA - Transformer - x2 - 3ϕ
- LUMA - Transformer - x1 - 1ϕ

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO — PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	50% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	
3	90% DESIGN DEVELOPMENT	3/27/23
4	90% ELECTRICAL ASSESSMT	4/19/23
5	100% ELECTRICAL ASSESSMT	8/31/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE RUIZ
BELVIS

SHEET ID

E204

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N

LAYOUT PLAN
SCALE 1:200

LAYOUT PLAN
SCALE: 1:200

N

LEGEND

- Existing Luminaire - AEE/LUMA
- Existing Luminaire - MUNICIPAL - Pole
- Existing Luminaire - MUNICIPAL - Wall
- LUMA - Pole - Primary - Concrete - Square/Rectangular
- LUMA - Pole - Primary - Concrete - Self Support Base
- LUMA - Transformer - x3 - 3ϕ
- LUMA - Transformer - x2 - 3ϕ
- LUMA - Transformer - x1 - 1ϕ

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SEAL

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PROJECT INFORMATION

PR-CRP-000815
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	
3	90% DESIGN DEVELOPMENT	3/27/23
4	90% ELECTRICAL ASSESSMT	4/19/23
5	100% ELECTRICAL ASSESSMT	8/31/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE RIUS
RIVERA

SHEET ID

E205

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N

LAYOUT PLAN
SCALE: 1:200

2 0 5 10 15m
SCALE: 1:200

LEGEND

- Existing Luminaire - AEE/LUMA
- Existing Luminaire - MUNICIPAL - Pole
- Existing Luminaire - MUNICIPAL - Wall
- LUMA - Pole - Primary - Concrete - Square/Rectangular
- LUMA - Pole - Primary - Concrete - Self Support Base
- LUMA - Transformer - x3 - 3ϕ
- LUMA - Transformer - x2 - 3ϕ
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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
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5	100% ELECTRICAL ASSESSMT	8/31/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE RIUS
RIVERA

SHEET ID

E206

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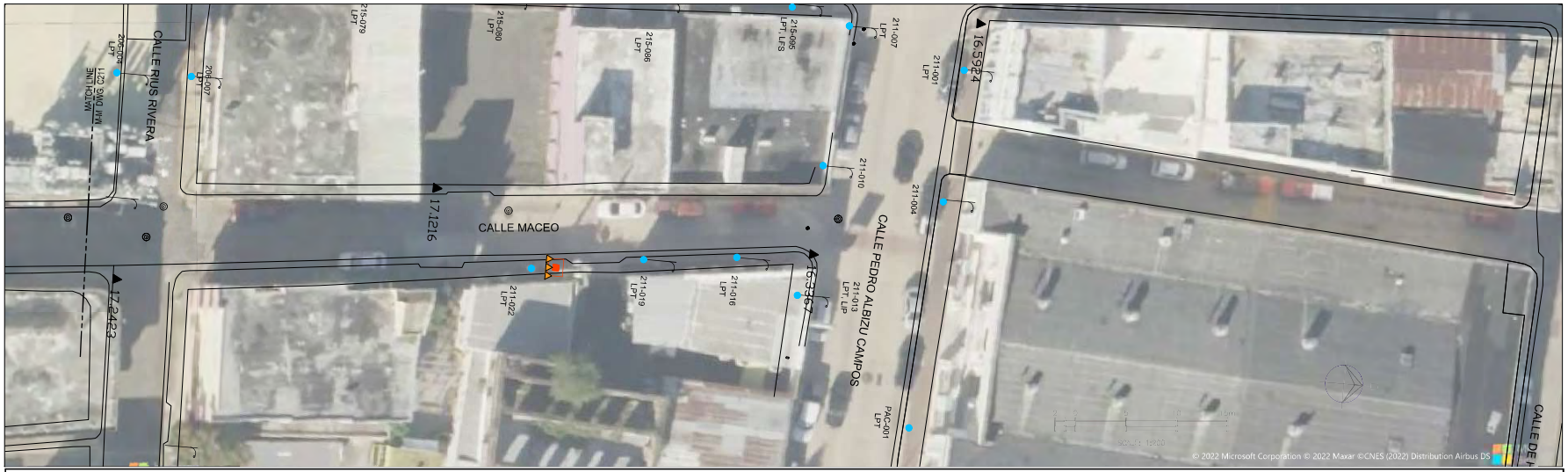
LAYOUT PLAN
SCALE 1:200



LEGEND

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SEAL

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	50% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	
3	90% DESIGN DEVELOPMENT	3/27/23
4	90% ELECTRICAL ASSESSMT	6/19/23
5	100% ELECTRICAL ASSESSMT	8/31/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE ANTONIO
MACEO

SHEET ID

E211

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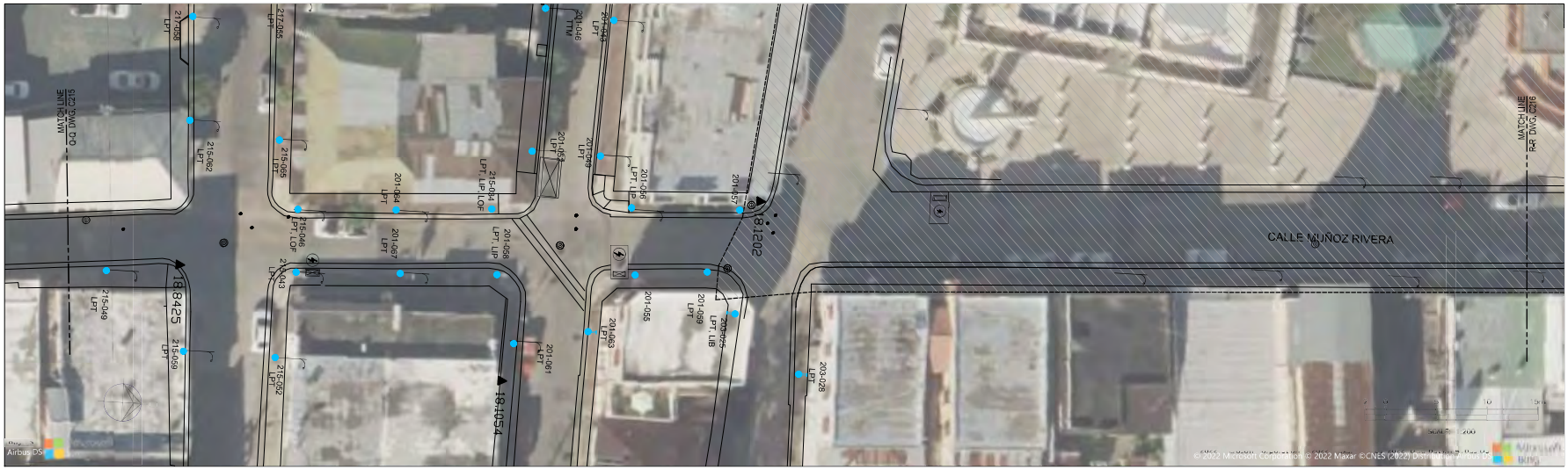
LAYOUT PLAN

SCALE 1:200



LEGEND

- Existing Luminaire - AEE/LUMA
- Existing Luminaire - MUNICIPAL - Pole
- Existing Luminaire - MUNICIPAL - Wall
- LUMA - Pole - Primary - Concrete - Square/Rectangular
- LUMA - Pole - Primary - Concrete - Self Support Base
- LUMA - Transformer - x3 - 3ϕ
- LUMA - Transformer - x2 - 3ϕ
- LUMA - Transformer - x1 - 1ϕ

OWNER

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SEAL

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO — PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	50% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	
3	90% DESIGN DEVELOPMENT	3/27/23
4	90% ELECTRICAL ASSESSMT	4/19/23
5	100% ELECTRICAL ASSESSMT	8/31/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE MUÑOZ
RIVERA

SHEET ID

E215

7/8/2020 3:15:46 PM C:\Users\Luz M. Rodriguez\OneDrive - Benitez Ramos & Asociados\02-Design Projects\2021\I-Cabo Rojo-A&E-Mejoras Calles\01-Documents\Revised Docs & Drawings\2023-08-14_ElectricalFinalE215-16.dwg

LAYOUT PLAN
SCALE 1:200

LEGEND

- Existing Luminaire - AEE/LUMA
- Existing Luminaire - MUNICIPAL - Pole
- Existing Luminaire - MUNICIPAL - Wall
- LUMA - Pole - Primary - Concrete - Square/Rectangular
- LUMA - Pole - Primary - Concrete - Self Support Base
- LUMA - Transformer - x3 - 3ϕ
- LUMA - Transformer - x2 - 3ϕ
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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
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CABO ROJO PUERTO RICO

REVISIONS

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5	100% ELECTRICAL ASSESSMT	8/31/23

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DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE MUÑOZ
RIVERA

SHEET ID

E216

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N

LAYOUT PLAN
SCALE: 1:200

LAYOUT PLAN
SCALE: 1:200

LEGEND

- Existing Luminaire - AEE/LUMA
- Existing Luminaire - MUNICIPAL - Pole
- Existing Luminaire - MUNICIPAL - Wall
- LUMA - Pole - Primary - Concrete - Square/Rectangular
- LUMA - Pole - Primary - Concrete - Self Support Base
- LUMA - Transformer - x3 - 3ϕ
- LUMA - Transformer - x2 - 3ϕ
- LUMA - Transformer - x1 - 1ϕ

OWNER

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SEAL

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
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CABO ROJO — PUERTO RICO

REVISIONS

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DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE BETANCES

SHEET ID

E217

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N

LAYOUT PLAN
SCALE 1:200

2 0 5 10 15m
SCALE: 1:200

LEGEND

- Existing Luminaire - AEE/LUMA
- Existing Luminaire - MUNICIPAL - Pole
- Existing Luminaire - MUNICIPAL - Wall
- LUMA - Pole - Primary - Concrete - Square/Rectangular
- LUMA - Pole - Primary - Concrete - Self Support Base
- LUMA - Transformer - x3 - 3ϕ
- LUMA - Transformer - x2 - 3ϕ
- LUMA - Transformer - x1 - 1ϕ

OWNER

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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

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5	100% ELECTRICAL ASSESSMT	8/31/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE BETANCES

SHEET ID

E218

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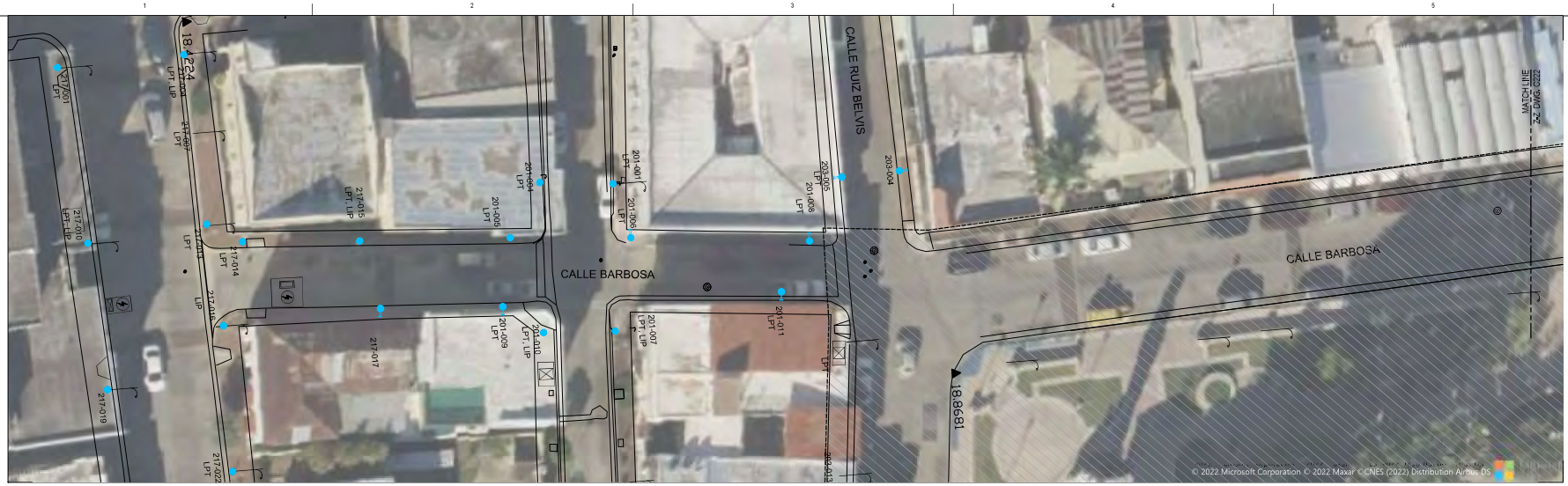

LAYOUT PLAN
SCALE 1:200

LEGEND

- Existing Luminaire - AEE/LUMA
- Existing Luminaire - MUNICIPAL - Pole
- Existing Luminaire - MUNICIPAL - Wall
- LUMA - Pole - Primary - Concrete - Square/Rectangular
- LUMA - Pole - Primary - Concrete - Self Support Base
- LUMA - Transformer - x3 - 3ϕ
- LUMA - Transformer - x2 - 3ϕ
- LUMA - Transformer - x1 - 1ϕ

OWNER
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PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
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5	100% ELECTRICAL ASSESSMT	8/31/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LAYOUT PLAN
CALLE BARBOSA

SHEET ID

E222

7/8/2020 3:15:46 PM C:\Users\Luz M. Rodriguez\OneDrive - Benitez Ramos & Asociados\02-Design Projects\2021\R-Cabo Rojo-A&E-Mejoras Calle 101-Documents\Revised Docs & Drawings\2023-08-14_ElectricalFinalE222-223.dwg

N

LAYOUT PLAN
SCALE: 1:200

LAYOUT PLAN
SCALE: 1:200

LEGEND

- Existing Luminaire - AEE/LUMA
- Existing Luminaire - MUNICIPAL - Pole
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OWNER

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4	90% ELECTRICAL ASSESSMT	4/19/23
5	100% ELECTRICAL ASSESSMT	8/31/23

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LAYOUT PLAN
CALLE BARBOSA

SHEET ID

E223

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LUMINAIRES ASSESSMENT

CABO ROJO, PUERTO RICO

					CONDITION		
PLOT	ID	STREET	REFERENCE	LUMINAIRE TYPE	CONDITION 1	CONDITION 2	CONDITION 3
201	001	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - PAINT		
201	004	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - PAINT		
201	005	BARBOSA	Casi esquina Baldorioty	ORN-REG	LUMINAIRE - PAINT		
201	006	BARBOSA	Al lado Crafters Store	ORN-WALL	LUMINAIRE - PAINT		
201	007	BALDORIOTY DE CASTRO	Esquina Barbosa	ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
201	008	BARBOSA	Esquina Ruiz Belvis. Al lado Crafters Store.	ORN-WALL	LUMINAIRE - PAINT		
201	009	BARBOSA		ORN-WALL	LUMINAIRE - PAINT		
201	010	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
201	011	BARBOSA		ORN-WALL	LUMINAIRE - PAINT		
201	013	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - PAINT		
201	016	BALDORIOTY DE CASTRO		ORN-REG			
201	019	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - PAINT		
201	022	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
201	025	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - PAINT		
201	028	BALDORIOTY DE CASTRO		ORN-REG			
201	031	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - PAINT		
201	034	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - PAINT		
201	037	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - INCLINED BODY	LUMINAIRE - PAINT	
201	040	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - PAINT		
201	043	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - PAINT		
201	046	BALDORIOTY DE CASTRO		ORN-REG	TREE TRIMMING - MAINTENANCE		
201	049	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - PAINT		
201	052	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - PAINT		
201	055	MUÑOZ RIVERA	Esquina Baldorioty	ORN-REG			
201	056	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
201	057	MUÑOZ RIVERA	Esquina Ruiz Belvis	ORN-REG			
PLOT	ID	STREET	REFERENCE	LUMINAIRE TYPE	CONDITION 1	CONDITION 2	CONDITION 3
201	058	MUÑOZ RIVERA	Esquina Baldorioty	ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
201	058	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - PAINT		
201	061	BALDORIOTY DE CASTRO		ORN-REG	LUMINAIRE - PAINT		
201	063	BALDORIOTY DE CASTRO		ORN-WALL	LUMINAIRE - PAINT		
201	064	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - PAINT		
201	067	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - PAINT		
201	004	RUIS BELVIS		ORN-WALL	LUMINAIRE - PAINT		
203	005	RUIS BELVIS		ORN-WALL	LUMINAIRE - PAINT		
203	025	RUIS BELVIS		ORN-WALL	LUMINAIRE - INCLINED BODY	LUMINAIRE - PAINT	
203	028	RUIS BELVIS		ORN-WALL	LUMINAIRE - PAINT		
205	001	RIUS RIVERA	Esquina de La Moda Elegante	ORN-REG	LUMINAIRE - VERY DIRTY SHADE		
205	004	RIUS RIVERA	Frente a Centro Visión	ORN-WALL			
206	004	RIUS RIVERA		ORN-REG	LUMINAIRE - PAINT		
206	007	RIUS RIVERA	Entre Sebucan y Farmacia Incarnación	ORN-REG	LUMINAIRE - PAINT		
211	001	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
211	004	PEDRO ALBIZU CAMPOS	Frente mercado	ORN-REG			
211	007	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
211	010	PEDRO ALBIZU CAMPOS	Frente CLARO	ORN-REG			
213	013	PEDRO ALBIZU CAMPOS	Frente Taco Maker	ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
213	016	ANTONIO MACEO	Frente Taco Maker	ORN-REG	LUMINAIRE - PAINT		
213	019	ANTONIO MACEO	Entrada Servi-Cerro Taco Maker	ORN-REG	LUMINAIRE - PAINT		
213	022	ANTONIO MACEO	Frente fachada como ruina. Al lado poste con 3 transf.	ORN-REG	LUMINAIRE - PAINT		
215	034	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - STAYS OFF	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT
215	043	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - PAINT		
215	046	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - STAYS OFF	LUMINAIRE - PAINT	
PLOT	ID	STREET	REFERENCE	LUMINAIRE TYPE	CONDITION 1	CONDITION 2	CONDITION 3
215	049	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - PAINT		
215	052	BETANCES		ORN-REG	LUMINAIRE - PAINT		
215	058	BETANCES		ORN-REG	LUMINAIRE - PAINT		
215	062	BETANCES		ORN-REG	LUMINAIRE - PAINT		
215	065	BETANCES		ORN-REG	LUMINAIRE - PAINT		
215	077	MUÑOZ RIVERA		ORN-REG			
215	078	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - PAINT		
215	079	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - PAINT		
215	080	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - PAINT		
215	083	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - PAINT		
215	086	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - PAINT		
215	088	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - PAINT		
215	092	MUÑOZ RIVERA		ORN-REG	LUMINAIRE - PAINT		
215	095	MUÑOZ RIVERA	Al lado Consultorio Dra. Magaly Briceno Perez.	ORN-REG	LUMINAIRE - FLASHING	LUMINAIRE - PAINT	
216	001	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
216	004	PEDRO ALBIZU CAMPOS	Al lado Muebleria El Morro	ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
217	001	BETANCES		ORN-REG	LUMINAIRE - PAINT		
217	003	PR103 - SALVADOR BRAU		ORN-REG	LUMINAIRE - PAINT		
217	004	BETANCES		ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
217	007	BETANCES		ORN-REG	LUMINAIRE - PAINT		
217	010	BETANCES		ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
217	013	BETANCES	Esquina Barbosa	ORN-REG	LUMINAIRE - PAINT		
217	014	BARBOSA	Esquina Betances	ORN-REG	LUMINAIRE - PAINT		
217	015	BARBOSA		ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
217	016	BETANCES	Esquina Barbosa	ORN-REG	LUMINAIRE - INCLINED POLE		
217	017	BARBOSA		ORN-WALL			
217	019	BETANCES		ORN-REG			
217	022	BETANCES		ORN-REG	LUMINAIRE - PAINT		

LUMINAIRES ASSESSMENT

CABO ROJO, PUERTO RICO

					CONDITION		
PLOT	ID	STREET	REFERENCE	LUMINAIRE TYPE	CONDITION 1	CONDITION 2	CONDITION 3
217	025	BETANCES		ORN-REG	LUMINAIRE - INCLINED POLE		
217	028	BETANCES	Intrada principal Centro Teatreo Municipal	ORN-REG	LUMINAIRE - PAINT		
217	031	BETANCES		ORN-REG	LUMINAIRE - PAINT		
217	034	BETANCES	Intrada principal Centro Teatreo Municipal	ORN-REG	LUMINAIRE - PAINT		
217	037	BETANCES		ORN-REG	LUMINAIRE - PAINT		
217	040	BETANCES		ORN-REG	LUMINAIRE - PAINT		
217	043	BETANCES		ORN-REG	LUMINAIRE - PAINT		
217	046	BETANCES		ORN-REG	LUMINAIRE - PAINT		
217	049	BETANCES		ORN-REG	LUMINAIRE - INCLINED BODY	LUMINAIRE - PAINT	
217	052	BETANCES		ORN-REG	LUMINAIRE - PAINT		
217	055	BETANCES		ORN-REG	LUMINAIRE - PAINT		
217	058	BETANCES		ORN-REG	LUMINAIRE - PAINT		
220	001	PEDRO ALBIZU CAMPOS	Frente edificio pintado con bandera PR	ORN-REG	LUMINAIRE - PAINT		
220	002	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
220	004	PEDRO ALBIZU CAMPOS		ORN-REG			
220	007	PEDRO ALBIZU CAMPOS	Frente Amor Al Bien	ORN-REG			
220	010	PEDRO ALBIZU CAMPOS		ORN-REG			
220	016	PEDRO ALBIZU CAMPOS	En la misma curva	ORN-REG	LUMINAIRE - PAINT		
220	019	PEDRO ALBIZU CAMPOS	Frente Amor Al Bien	ORN-REG	LUMINAIRE - PAINT		
220	022	PEDRO ALBIZU CAMPOS	Frente Parque	ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
220	025	PEDRO ALBIZU CAMPOS	Frente Parque	ORN-REG			
220	028	PEDRO ALBIZU CAMPOS	Frente casa azul	ORN-REG	LUMINAIRE - INCLINED BODY	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT
220	031	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - INCLINED POLE		
222	016	BARBOSA	Al lado Centro Visión	ORN-WALL			
222	019	BARBOSA	Al lado Dr. Jim Rivera Rigau	ORN-REG			
222	021	BARBOSA		ORN-REG	LUMINAIRE - PAINT		
PLOT	ID	STREET	REFERENCE	LUMINAIRE TYPE	CONDITION 1	CONDITION 2	CONDITION 3
222	025	BARBOSA		ORN-REG	LUMINAIRE - STAYS OFF	LUMINAIRE - PAINT	
222	028	BARBOSA		ORN-REG	LUMINAIRE - PAINT		
222	031	BARBOSA		ORN-REG	LUMINAIRE - PAINT		
222	034	BARBOSA		ORN-REG	LUMINAIRE - PAINT		
222	037	BARBOSA		ORN-REG	LUMINAIRE - PAINT		
222	040	BARBOSA		ORN-REG	LUMINAIRE - BROKEN SHADE	LUMINAIRE - PAINT	
222	043	BARBOSA		ORN-REG	LUMINAIRE - INCLINED POLE		
222	046	BARBOSA		ORN-REG	LUMINAIRE - PAINT		
222	049	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
222	052	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - STAYS OFF	LUMINAIRE - PAINT	
222	055	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
222	058	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
222	061	PEDRO ALBIZU CAMPOS	Frente a La Vida Como Es	ORN-REG	LUMINAIRE - PAINT		
222	064	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
222	067	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
222	070	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - VERY DIRTY SHADE	LUMINAIRE - PAINT	
222	073	BARBOSA	Frente a La Vida Como Es	ORN-REG	LUMINAIRE - VERY DIRTY SHADE	LUMINAIRE - PAINT	
222	074	BARBOSA	Frente a La Vida Como Es	ORN-REG	LUMINAIRE - PAINT		
PAC	001	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
PAC	004	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
PAC	007	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
PAC	010	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
PAC	013	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
PAC	016	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
PAC	019	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
PAC	022	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
PAC	025	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
PLOT	ID	STREET	REFERENCE	LUMINAIRE TYPE	CONDITION 1	CONDITION 2	CONDITION 3
PAC	028	PEDRO ALBIZU CAMPOS		ORN-REG			
PAC	031	PR103 - SALVADOR BRAU		ORN-REG	LUMINAIRE - PAINT		
PAC	031	PR103 - SALVADOR BRAU	Esq-esquina Pedro Albizu Campos. Frente a DABS	ORN-REG	LUMINAIRE - PAINT		
PAC	034	PEDRO ALBIZU CAMPOS	Frente a DABS	ORN-REG	LUMINAIRE - STAYS OFF	TREE TRIMMING - REQUIRED	
PAC	037	PEDRO ALBIZU CAMPOS		ORN-REG	TREE TRIMMING - REQUIRED	LUMINAIRE - PAINT	
PAC	040	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - STAYS OFF	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT
PAC	043	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
PAC	046	PEDRO ALBIZU CAMPOS		ORN-REG			
PAC	049	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - FLASHING	LUMINAIRE - PAINT	
PAC	052	PEDRO ALBIZU CAMPOS	Frente Casa Amarilla	ORN-REG	LUMINAIRE - STAYS OFF	LUMINAIRE - PAINT	
PAC	055	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
PAC	058	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - FLASHING		
PAC	061	PEDRO ALBIZU CAMPOS		ORN-REG			
PAC	064	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - STAYS OFF	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT
PAC	067	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - STAYS OFF	LUMINAIRE - PAINT	
PAC	070	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
PAC	073	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
PAC	076	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
PAC	079	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - STAYS OFF	LUMINAIRE - PAINT	
PAC	082	PEDRO ALBIZU CAMPOS		ORN-REG	LUMINAIRE - PAINT		
PAC	085	PEDRO ALBIZU CAMPOS	Al lado del canal	ORN-REG	LUMINAIRE - PAINT		
PAC	088	PEDRO ALBIZU CAMPOS	Al lado del canal	ORN-REG	LUMINAIRE - PAINT		
PAC	091	PEDRO ALBIZU CAMPOS	Al lado del canal	ORN-REG	LUMINAIRE - PAINT		

NOTES:

1. REFER TO DWG. E000 FOR LUMINAIRE CONDITIONS (CODE) AND REPAIRS RECOMMENDATIONS TABLE.
2. REFER TO DWG. E001 FOR TYPICAL LUMINAIRE POLE MODEL AND DETAILS. REPAIRS SPECIFICATIONS SHALL BE AS PER MANUFACTURER RECOMMENDATIONS.

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SEAL

YO, JOSÉ DANILO GONZÁLEZ, LIC. 10167, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONÓ Y/O DISEÑÓ Y/O PREPARÓ ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS. TAMBIÉN CERTIFICO QUE ENTIENDO QUE DICHOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONJUNTO Y LAS DISPOSICIONES APLICABLES DE LOS REGLAMENTOS Y CÓDIGOS DE CONSTRUCCIÓN VIGENTES DE LAS AGENCIAS, JUNTAS REGLAMENTADORAS Y CORPORACIONES PÚBLICAS CON JURISDICCIÓN. CERTIFICO, ADEMÁS, QUE EN LA PREPARACIÓN DE ESTOS PLANOS Y ESPECIFICACIONES SE HA CUMPLIDO CABALMENTE CON LO DISPUESTO EN LA LEY NÚM. 14 DEL 8 DE ENERO DE 2004, SEGÚN ENMENDADA, CONOCIDA COMO LEY PARA LA INVERSIÓN POR LA INDUSTRIA PUERTORRIQUEÑA Y CON LA LEY NÚM. 519 DEL 19 DE MAYO DE 1958 , SEGÚN ENMENDADA, LEY NÚM. 96 DEL 6 DE JULIO DE 1978, SEGÚN ENMENDADA, SEGÚN APLIQUE. RECONOZCO QUE CUALQUIER DECLARACIÓN FALSA O FALSIFICACIONES DE LOS HECHOS QUE SE HAYA PROCEDIDO POR DESCONOCIMIENTO O POR NEGLIGENCIA YA SEA POR MÍ, MIS AGENTES O EMPLEADOS, O POR OTRAS PERSONAS CON MI CONOCIMIENTO, ME HACEN RESPONSABLE DE CUALQUIER ACCIÓN JUDICIAL Y DISCIPLINARIA EN LA OSATE.

PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	30% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	
3	90% DESIGN DEVELOPMENT	3/27/23
4	90% ELECTRICAL ASSESSMT	4/19/23
5	100% DESIGN DEVELOPMENT	08/31/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LUMINAIRES ASSESSMENT TABLES

SHEET ID

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LUMINAIRES ASSESSMENT

CABO ROJO, PUERTO RICO

PLOT	ID	STREET	REFERENCE	Quantity	LUMINAIRE TYPE	CONDITION 1	CONDITION 2	CONDITION 3
						CONDITION		
PAC	094	PEDRO ALBIZU CAMPOS	Al lado del canal	1	ORN-REG	LUMINAIRE - INCLINED POLE	LUMINAIRE - PAINT	
PAC	097	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - PAINT		
PAC	100	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - BROKEN SHADE	LUMINAIRE - PAINT	
PAC	103	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - PAINT		
PAC	106	PEDRO ALBIZU CAMPOS		1	ORN-REG			
PAC	109	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - PAINT		
PAC	112	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - PAINT		
PAC	115	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - PAINT		
PAC	118	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - PAINT		
PAC	121	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - PAINT		
PAC	124	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - PAINT		
PAC	127	PEDRO ALBIZU CAMPOS		1	ORN-REG	TREE TRIMMING - REQUIRED		
PAC	130	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - PAINT		
PAC	133	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - PAINT		
PAC	136	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - PAINT		
PAC	139	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - INCLINED BODY	LUMINAIRE - PAINT	
PAC	142	PEDRO ALBIZU CAMPOS	Entrada Garage Gasolina	1	ORN-REG			
PAC	145	PEDRO ALBIZU CAMPOS		1	ORN-REG	TREE TRIMMING - MAINTENANCE	LUMINAIRE - PAINT	
PAC	148	PEDRO ALBIZU CAMPOS	Entrada Garage Gasolina	1	ORN-REG	LUMINAIRE - PAINT		
PAC	151	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - INCLINED POLE	TREE TRIMMING - MAINTENANCE	LUMINAIRE - PAINT
PAC	154	PEDRO ALBIZU CAMPOS		1	ORN-REG	LUMINAIRE - PAINT		
PAC	157	PEDRO ALBIZU CAMPOS	Intersección con la PR311	1	ORN-REG			
Total	177							

LUMINAIRES TOTAL :	177

CONDITION	Quantity
LUMINAIRE - BROKEN BULB	0
LUMINAIRE - BROKEN BASE	0
LUMINAIRE - BROKEN SHADE	2
LUMINAIRE - VERY DIRTY SHADE	1
LUMINAIRE - FLASHING	1
LUMINAIRE - INCLINED BODY	5
LUMINAIRE - INCLINED POLE	24
LUMINAIRE - MISSING SHADE	0
LUMINAIRE - NEST BUILT	0
LUMINAIRE - STAYS OFF	10
LUMINAIRE - START-UP ISSUE	0
LUMINAIRE - PAINT	145
LUMINAIRE - TREE ACCESS	0

NOTES:

1. REFER TO DWG. E000 FOR LUMINAIRE CONDITIONS (CODE) AND REPAIRS RECOMMENDATIONS TABLE.
2. REFER TO DWG. E001 FOR TYPICAL LUMINAIRE POLE MODEL AND DETAILS. REPAIRS SPECIFICATIONS SHALL BE AS PER MANUFACTURER RECOMMENDATIONS.

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SEAL

YO, JOSÉ DANILO GONZÁLEZ, LIC. 10167, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONÓ Y/O DISEÑÓ Y/O PREPARÓ ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS. TAMBIÉN CERTIFICO QUE ENTIENDO QUE DICHOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONJUNTO Y LAS DISPOSICIONES APLICABLES DE LOS REGLAMENTOS Y CÓDIGOS DE CONSTRUCCIÓN VIGENTES DE LAS AGENCIAS, JUNTAS REGLAMENTADORAS O CORPORACIONES PÚBLICAS CON JURISDICCIÓN. CERTIFICO, ADEMÁS, QUE EN LA PREPARACIÓN DE ESTOS PLANOS Y ESPECIFICACIONES SE HA CUMPLIDO CABALMENTE CON LO DISPUESTO EN LA LEY NÚM. 14 DEL 8 DE ENERO DE 2004, SEGÚN ENMENDADA, CONOCIDA COMO LEY PARA LA INVERSIÓN POR LA INDUSTRIA PUERTORRIQUEÑA Y CON LA LEY NÚM. 319 DEL 15 MAYO DE 1968 , SEGÚN ENMENDADA, LEY NÚM. 96 DEL 6 DE JULIO DE 1978, SEGÚN ENMENDADA, SEGÚN APLIQUE. RECONOZCO QUE CUALQUIER DECLARACIÓN FALSA O FALSIFICACIONES DE LOS HECHOS QUE SE HAYA PROCEDIDO POR DESCONOCIMIENTO O POR NEGLIGENCIA YA SEA POR MÍ, MIS AGENTES O EMPLEADOS, O POR OTRAS PERSONAS CON MI CONOCIMIENTO, ME HACEN RESPONSABLE DE CUALQUIER ACCIÓN JUDICIAL Y DISCIPLINARIA POR LA MISMA.

PROJECT INFORMATION

PR-CRP-000845
REHABILITACION
DE LA INFRAESTRUCTURA
DEL CENTRO URBANO

CABO ROJO PUERTO RICO

REVISIONS

NO.	DESCRIPTION	DATE
1	50% DESIGN DEVELOPMENT	12/30/22
2	60% DESIGN DEVELOPMENT	
3	90% DESIGN DEVELOPMENT	3/27/23
4	90% ELECTRICAL ASSESSMT	4/19/23
5	100% DESIGN DEVELOPMENT	08/31/23

DATE ISSUED:	10/26/22
REVIEWED BY:	LMR
DRAWN BY:	AMC
DESIGNED BY:	LMR
BRA PROJECT NUMBER:	22018

SHEET TITLE

LUMINAIRES ASSESSMENT TABLES

SHEET ID

E701

7/8/2020 3:15:46 PM C:\Users\Liz M. Rodriguez\OneDrive - Benitez Ramos & Associates\02-Design Projects\2021\4-Cabo Rojo-A&E-Mejoras-Calles\07-Project Design\05-Sheets\E701.dwg

Appendix G

PR-CRP-000845

Rehabilitación de la Infrastructura del Centro Urbano Project

Cabo Rojo, Puerto Rico

Field Inspection Report

AVA ENVIRONMENTAL CONSULTANTS, INC.
P.O. BOX 361300, SAN JUAN, PUERTO RICO 00936-1300
TEL. (787) 505-4981
E-MAIL: AVAENVIRONMENTAL@GMAIL.COM

Technical Memorandum to File

Site Visit Project *Rehabilitación de la Infraestructura del Centro Urbano* (PR-CRP-000845), Municipality of Cabo Rojo

Date: ***September 3, 2025***

As a result of a field reconnaissance that took place at the proposed project site July 14, 2023, with the intent of evaluating environmental aspects pursuant to 24CFR58 regulation, relevant regulatory environmental risks were not identified. Oil stains in asphalted streets were observed, but we understand these to be de minimis conditions. Registers that may correspond to groundwater monitoring wells were observed within the project area, which is located a Superfund Site. Several electrical transformers were also noted; while most appear to be in good condition, it is unknown whether they contain PCBs. These two observations represent potential data gaps.

Recognized Environmental Condition (RECs) were identified within the project site. As of the date of the Report (August 2023), available information at that time indicated there are eight (8) facilities that could represent environmental concern for the Site and should be further examined. As indicated in the Report included in Exhibit 6a of the Environmental Review Record (ERR) statutory form, the Project is located in a Superfund, specifically, the area identified as Plume 1 of the Cabo Rojo Groundwater Contamination Site. According to the information provided, the sidewalks in front of the two sites identified as sources of contamination Cabo Rojo Professional Dry Cleaners (CRPDC) and Extasy Q Prints (EQP) will be affected. There would be excavation work in the contaminated area; thus, they could represent environmental concerns. Six (6) of the CERCLA No Further Remedial Action Planned (NFRAP) sites identified could represent an environmental concern as well as the Leaking Underground Storage Tank (LUST) noted. Information included as part of the Report should not be construed to be that of a Phase 1 Environmental Assessment, as all the elements required by the ASTM Standard E1527-21 where not analyzed in conjunction.

Detailed information regarding the abovementioned findings is summarized in the ERR form and Exhibit 6a. It is important to note that the findings presented in this memorandum and in Exhibit 6a of the ERR reflect conditions observed during the inspection conducted in July 2023 and information gathered through the EPA databases as of August 2023. It is not known whether site conditions or contamination reports have changed since that time.

By:

Annette M. Fernandez Rosario

Digitally signed by Annette M. Fernandez Rosario
Date: 2025.09.03 11:28:36 -04'00'

Annette M. Fernandez Rosario, PE
President
AVA Environmental Consultants, Inc.

Appendix H
Site Photos

Site Photos – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229

Site Photos – PR-CRP-000845

Address: Several Streets, Cabo Rojo, Puerto Rico 00623
Coordinates: 18.087449, -67.146229