

# María del Alma Concepción Rodríguez



## Summary Biography

Currently gathering experience in Environmental Compliance departments. Dedicated to contributing inventive and strategic energy to environmental projects by assisting with on-site assessments, reporting assignments, and writing technical documents, such as Water Quality Summary and Environmental Assessment Reports. These tasks involve gathering and analyzing multiple data sets, using characterization software like ArcGIS, and extracting useful information to generate reports. The chemical and environmental background provides interpersonal and coordination skills transferable across all levels of any organization.

## Key Skills/Areas of Expertise

- Analysis and Problem Solving
- Computer applications: ArcGIS Pro, ArcCatalog, Microsoft Office, Microsoft SQL Server Management Studio, Python, HTML
- Coordination and Management
- Data Collection and Processing
- Remote sensing Imaging Analysis and data processing
- Inspections of pipelines and manholes with zoom cameras (Envirosight QuickView Haloptic, CUES QZ2)
- Mediation and Communication
- QA/QC Analysis
- Technical and non-technical report writing

## Education, Qualifications, Registrations, and Certifications

- BS, Chemical Engineering, Polytechnic University of Puerto Rico (PUPR)
- MEnvM, Environmental Management, Polytechnic University of Puerto Rico (PUPR)
- PhD, Civil Engineering, Polytechnic University of Puerto Rico (PUPR) (2022-current)

## Memberships and Affiliations

- Lead, Jacobs Women's Network PR
- Co-lead, Jacobs Enlace Network PR

## Training

- Construction General Permit (CGP) Site Inspector, US Environmental Protection Agency (EPA), 2024
- Stormwater Discharges and Permits in Construction (SWPPP), 360 Training, 2024
- Occupational Safety and Health Administration (OSHA) Outreach Training Course in Construction Industry – 30 hours, 360 Training, 2024
- Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) Training Course Refresher – 8 hours, 360 Training, 2023
- Entrepreneurship, Innovation, and International Business, EP International, 2023
- Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) Training Course – 40 hours, 360 Training, 2022
- Estimating and Cost Control Course, Kinetic Interactive Synergy Solutions, PR LLC, 2021
- Resource Conservation and Recovery Act (RCRA) Course, UAGM/INEDA, 2021
- Occupational Safety and Health Administration (OSHA) Training Course in Construction Industry – 10 hours, Jacobs, 2020
- Hazard Communication (HAZCOM) Course, CPM Intl, 2019
- Confined Space Awareness Course, CPM Intl, 2019
- Occupational Safety and Health Administration (OSHA) Training Course in General Industry – 30 hours, CPM Intl, 2018

## Achievements/Awards

- Diversity, Equity, and Inclusion (DEI) Professional Development Scholarship 2024-2025, AWRA
- Graduate Presentation Award Second Place, September 2024, American Water Resources Association (AWRA), Universities Council of Water Resources (UCOWR), and National Institutes of Water Resources (NIWR) 60th Joint Conference
- Graduate Poster Presentation Award Runner-Up, March 2024, AWRA 2024 Geospatial Water Technology Conference
- Honorable Mention Student Lightning Talk Competition 2024 North Carolina Water Resources Association-Water Resources Research Institute (NCWRA-WRRI), March 2024, 26<sup>th</sup> Annual WRRI Conference
- Magna Cum Laude, April 2018, PUPR
- Chemical Engineering Honor Students Recognition, December 2015, 2016, and 2017, PUPR
- Distinguished Student Award and Academic Excellence Award, October 2014, PUPR

## Languages

- English
- Spanish

## Employment History

- December 2018 to Present, Jacobs Engineering Group, Environmental Engineering Professional
- August 2019 to August 2024, PRISMA, PSC, Environmental Compliance Specialist
- July 2019 to 2021, Betara Group Services, PSC, Environmental Health Safety Specialist
- April 2018 to December 2018, CH2M/CH Caribe, PSC, Water Engineer
- April 2017 to April 2019, CH2M/CH Caribe, PSC, Water Engineering Intern
- June 2016 to Aug 2016, Puerto Rico Aqueduct and Sewer Authority, Environmental Specialist Intern

## Project Experience

### Environmental Engineering Professional – Jacobs Engineering Solutions

#### Metropistas Annual State of the Toll Roads and Capital Improvement Program (CIP)

##### PR-22 and PR-5 / PR-52, PR-53, PR-66, & PR-20 Condition Assessments

- Assistant Project Manager
- Perform site visits of the Metropistas facilities to evaluate environmental compliance in the operations and maintenance of the toll plazas from PR-22 (Km 0.6) in San Juan to Hatillo (km 84.4) and PR-5 from the interchange with PR-2 up to the interchange with PR-199 in Bayamón; and from PR-52
- Develop Environmental Status Report (Environmental Inspection Forms / Features Sheets and Environmental Assessment Certification) through research and utilising photos and information collected during site visits
- Lead in creating schema and applying GIS tools for implementation of digital inspection records

#### Puerto Rico Highways and Transportation Authority (PRHTA) – Flood Mitigation Study of PR-31 and PR-191

##### Flood Mitigation Study

- Safety Liaison
- Collaborated in data collection and existing condition analysis through research and site visit/assessment.
- Conducted site visit and collected data on physical features of the road and adjacent properties, historic floods and storm events, restoration efforts, and supporting information. Confirmed existing data for Roadway & Riverbank Conditions Assessment Report, Drainage/Storm Management Systems Conditions Assessment Report, and Ecological Assessment Report.

#### U.S. Navy Facility Engineering Command NAVFAC Atlantic/Navy CLEAN – Environmental Compliance Program

##### Groundwater Sampling

- Perform groundwater sampling for remedial action operations under the Comprehensive Environmental Resource Comprehensive Liability Act (CERCLA)

##### Land Use Controls (LUC) Inspection

- Visually examine surface debris, assess evidence of erosion on drainage features, Long-Term Monitoring (LTM) wells, and Land Use Controls (LUCs) for wells and signs at well locations

#### Puerto Rico Aqueduct and Sewer Authority (PRASA) Pretreatment Program

##### Environmental Protection Agency (EPA) Compliance Permits

- Organize permit procedures for and related to significant and non-significant users
- Provide direction and recommendation to develop a work plan containing specific tasks to monitor compliance according to policies, standards, and procedures.

##### Sewage Sludge Management Reports

- Research data based on the sludge reported to the facilities
- Calculate the amount of sludge disposal reported to the facilities
- Generate summary report based on the sludge data from Major Publicly Owned Treatment Works (POTWs) and Water Treatment Plants), in accordance with Title 40 Code of Federal Regulations (CFR)

## **Pretreatment Rules and Regulations**

- Revise and update wastewater discharge and pretreatment ordinance, issued in compliance with federal and state locals promulgated by EPA

## **PRASA Drinking Water Program**

### **Practical Guides on Chemical Dosage for Plant Operators**

- Generate visuals and guides based on the system manual for potable drinking water plants
- Develop procedure booklets for plant operators to use and properly dose chemical products for efficient water treatment processes

### **Process Control Flow Diagrams**

- Generate control diagrams based on the system manual for potable drinking water plants
- Establish a strategy to manage and optimize water treatment process using flow diagrams for issues related to turbidity, manganese, and disinfection byproducts

## **PRASA Sewer System Operating and Maintenance Program (SSOMP)**

### **Sewer Characterization, Monitoring, and Modelling Support**

- Coordinate daily schedule of work and supervise all tasks to be performed in field such as zoom camera and closed-circuit television (CCTV) inspections, cleaning of sanitary, storm, and combined sewer systems as well as to coordinate with the Puerto Nuevo Wastewater Treatment Plant (WWTP) the disposal of the material generated during the cleaning process.
- Support basic GIS mapping and data management services for fieldwork and performance tasks

## **PRASA Compliance Program**

### **Regional WWTP operations under a National Pollutant Discharge Elimination System (NPDES) Permit**

- Perform WWTP sampling conducted under the 301(h) and 403(c) sections
- Aid with the analysis and compilation of data for reports

### **Puerto Nuevo Incinerator (PNI) Emissions Report**

- Support the preparation of incinerator emission documentation and calculations according to EPA guidance on emissions inventories
- Review greenhouse gas (GHG) calculations carried out using appropriate data and estimation methods, according to compliance parameters under the 40 CFR and Regulation for the Control of the Atmospheric Pollution (RCAP).

### **Cost Analysis Report for potential surcharge fees due to industrial sewage discharges at twenty-seven (27) WWTPs**

- Conducted site visits and WWTP assessment
- Performed analysis of costs per unit volume associated with 5-day biochemical oxygen demand (BOD) and total suspended solids (TSS).

## **PRASA Master Plan**

### **Work Plan and Service Area Description**

- Assisted during the development of the work plan and service area description for the plant assessments
- Collected and organized data related to the water consumption per service area

## **U.S. Army Corps of Engineers/Mobile District by the 81<sup>st</sup> Readiness Division (RD) – Environmental Compliance Program**

### **Potable Water Surveys and Reports**

- Coordinated meeting with the aEPS or regional Facilities Operations Specialist (rFOS)
- Gathered data necessary for sampling activities and reports based on comprehensive assessment of potable water quality at non-residential structures
- Conducted individual site visits and collect water samples at three (3) U.S. Army Reserve Centers (USARCs)
- Completed water quality summary analysis and report for each facility

## Environmental Compliance Specialist – PRISMA, PSC

### Environmental Assessments and Reports

#### Environmental Site Assessments (ESA)

- Conducted site visit at subject property
- Prepared report for Phase I Environmental Site Assessment at subject property

### Environmental and Construction Permits

#### Stormwater Discharges Permits

- Prepared Stormwater Pollution Prevention Plan (SWPPP) for construction landslide sites
- Submitted Notice of Intent (NOI) using EPA Central Data Exchange (CDX) system

#### Construction Permits (Head Starts, Community Centers, and Municipal Police Stations)

- Organized and completed Environment Impact Statement (DEC) and necessary documentation for Construction Permits

#### Annual Report for Stormwater Discharges associated with industrial activity under the NPDES MultiSector General Permit (MSGP) – Northwestern Selecta

- Analyzed environmental data and completed permits for environmental compliance records

## Environmental Health Safety Specialist – Betara Group Engineering, PSC

### FEMA Reports and Proposals

#### Damage Assessment Report – HealthproMed Carolina/Culebra/Vieques

- Completed on-site assessments for the analysis of damages at the medical facilities
- Developed report for federal funding capital application; available after Hurricane María

#### Hazard Mitigation Grant Proposal – Baldwin School of Puerto Rico

- Participated of on-site assessment for evaluation of door and window damages at educational facility
- Composed proposal for application of federal funds application; available after Hurricane María

### \*Other Experience

## Water Engineering Intern – CH2M/CH Caribe, PSC

### PRASA SSOMP

- Operated investigations related to the procedure of sanitary, storm, and combined sewer systems through field visits and zoom videos cameras (Envirosight Quickview Haloptic and CUES QZ2) for the Sanitary Sewer Operation and Maintenance Program (S2OMP), which are part of the Puerto Nuevo Regional Wastewater Treatment Plant (RWWTP) collection system.
- Ensured that all the inspection photos and videos are uploaded in Data Collector for ArcGIS.

## Environmental Specialist Intern – PRASA Headquarters

### Compliance-Regulatory Affairs Department

- Labored at the Environmental Compliance-Regulatory Affairs Department
- Evaluated environmental regulations, development, and reviews of internal procedures
- Reviewed the Risk Management Plans (RMPs) and Spill Prevention Control and Countermeasure Plans (SPCCs)

## BIOGRAPHICAL SKETCH

**NAME:** María del Alma Concepción Rodríguez

**POSITION TITLE:** PhD Student & Environmental Engineering Professional

**ORGANIZATION:** Polytechnic University of Puerto Rico, San Juan, Puerto Rico, United States & Jacobs, Guaynabo, Puerto Rico, United States

### ACADEMIC PREPARATION

ORGANIZATION AND LOCATION	DEGREE	RECEIPT DATE	FIELD OF STUDY
Polytechnic University of Puerto Rico, San Juan, Puerto Rico, United States	PHD	05/2026	Civil Engineering - Water Resources
Polytechnic University of Puerto Rico, San Juan, Puerto Rico, United States	MEnvM	05/2022	Environmental Management
Polytechnic University of Puerto Rico, San Juan, Puerto Rico, United States	BS	02/2018	Chemical Engineering

### PROFESSIONAL PREPARATION

ORGANIZATION AND LOCATION	POSITION TITLE
Jacobs, Guaynabo, Puerto Rico, United States	Environmental Engineering Professional
CH2M Hill, Inc., Guaynabo, Puerto Rico, United States	Water Engineering Intern
Puerto Rico Aqueduct and Sewer Authority (PRASA)	Environmental Specialist Intern

### PRODUCTS (Closely Related to Research)

1. Concepción M. *Integrated Monitoring of Eutrophication Dynamics for Effluent Discharges in Oceanic Waters*. 2025 Universities Council on Water Resources (UCOWR) and National Institutes for Water Resources (NIWR) Annual Water Resources Conference; 2025 June 5; Minneapolis, MN, United States.
2. Concepción M. *Integrated Monitoring of Eutrophication Dynamics for Effluent Discharges in Oceanic Waters*. 2025 Puerto Rico Water and Environment Association (PRWE&A) Annual Conference; 2025 March 26; San Juan, PR, United States.
3. Concepción M. *Water Quality Risks in Coastal Regions: Evaluating Nutrient Variations from Primary Effluent Discharges*. 2024 AWRA, UCOWR & NIWR Joint Conference; 2024 October 2; St. Louis, MO, United States.

## BIOGRAPHICAL SKETCH

### OTHER SIGNIFICANT PRODUCTS (Related and Unrelated to Research)

1. Concepción M. *Impact of Individual Wastewater Treatment and Disposal Systems under Puerto Rico's Regulatory Codes*. 2022 PUPR Graduate Expo Spring 2022; 2022 May 26; San Juan, PR, United States.
2. Concepción M. *Filtration and Biodegradation by Acinetobacter venetianus (ATCC 13933) to treat Puma Energy Caribe's Contact Water*. 2018 PUPR Undergraduate Capstone Poster Presentation; 2018 February; San Juan, PR, United States.

### SYNERGISTIC ACTIVITIES

1. Presented a session titled "What's in Your Water?" to graduate students at Puerto Rico's Ponce Health Sciences University. The session explored water treatment, contaminants, and public health. I designed it to be interactive, with live polls and open questions, to create an engaging learning experience.
2. Volunteered to carry out water sampling activities in Cataño, Puerto Rico for the *Día de Calidad de Agua* as part of the San Juan Bay Estuary Program. Worked with youth volunteers and community members (colleagues), testing for pH, turbidity, E. coli, and other parameters.
3. Mentored middle school girls in summer camp GenCyber (Ladies Can Code), which promoted STEM careers. Girls were offered this opportunity to develop different skills, learn about STEM-related topics, and interact with girls from diverse communities. As a Big Sister, I mentored, encouraged, and engaged with them during the workshops and activities.